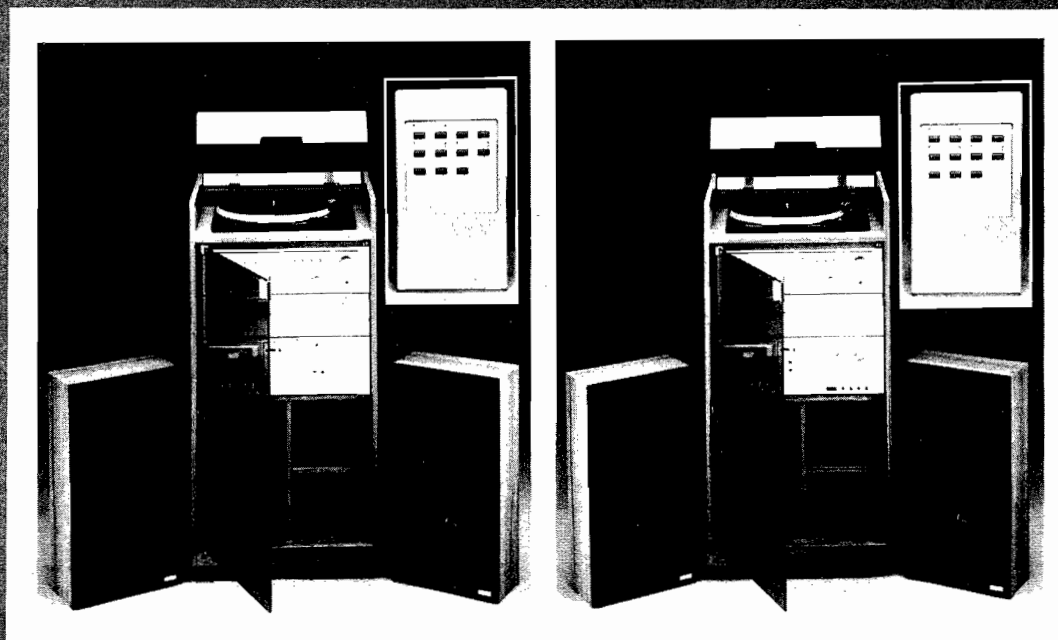


AMSTRAD



TS80 / TS88 REMOTE CONTROL TOWER SYSTEM SERVICE MANUAL

Price: £3.50

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| | |
|------------------------|--|
| AMPLIFIER SECTION | |
| Power Output | 8 Watts RMS per channel into 4 ohms 32 watts Total Peak Music Power |
| Frequency Response | 30Hz - 20KHz |
| Distortion | 1% @ 1KHz Full Power 0.2% @ 1KHz Half Power |
| Graphic Equaliser | 50Hz \pm 12dB 150Hz \pm 12dB 400Hz \pm 12dB 1KHz \pm 12dB 2.5KHz \pm 12dB 5KHz \pm 12dB 15KHz \pm 12dB |
| Filters | Scratch -10dB @ 12KHz Rumble -10dB @ 40Hz Loudness +10dB @ 100Hz at max. vol. +6dB @ 10KHz -30dB |
| Signal to noise ratio | Better than 55dB |
| TUNER SECTION | |
| FM Section | 86.5 - 109MHz |
| MW Section | 525 - 1650KHz |
| LW Section | 140 - 280KHz |
| FM Sensitivity | 5uV |
| FM Aerial Input | 75ohms |
| CASSETTE SECTION | |
| Tape | Cassette Type |
| Tape Speed | 4.75cm per second |
| Tracks | 2 Track Stereo |
| Wow and Flutter | 0.15% WRMS |
| Distortion | 1% @ 1KHz |
| Frequency Response | 80Hz - 6KHz Standard Tape 60Hz - 8KHz Chrome Tape 60Hz - 10KHz Metal Tape |
| Noise Reduction | -10dB @ 10KHz |
| Microphone Sensitivity | 0.5mV - 600ohm |
| TURNTABLE | BSR P267 |
| Cartridge | SC12M |
| Transmission | Belt Drive |
| Speed Control | Electronic |
| REMOTE CONTROL UNIT | |
| Method of Transmission | Infra Red-Pulse Position Modulation (PPM) |
| Volume up/down | 0dB max -80dB min |
| Balance left/right | -25dB attenuation per channel |
| Bass up/down | \pm 10dB @ 100Hz |
| Treble up/down | \pm 10dB @ 10KHz |
| Batteries | 2 x 1.5V Leak Proof Type: Hitachi Maxell 200. Ever Ready R6PP or equivalent |
| DIMENSIONS AND WEIGHTS | |
| Main Unit | 86cm (h) x 42cm (w) x 37cm (d) |
| Weight | 25.0Kg |
| Speakers | 49cm (h) x 27cm (w) x 13cm (d) |
| Weight | 4Kg each |
| Mains Voltage | 220 - 240V AC 50Hz |

GENERAL ROUTINE MAINTENANCE

The following cleaning and maintenance should be carried out on a regular basis:

- 1) Always ensure that the stylus is clean and properly located in the cartridge.
- 2) We recommend regular cleaning of the heads and the pinch roller of the cassette deck and there are two ways of cleaning these parts:
 - i. using a commercial 'head cleaning' cassette as per the manufacturers instructions.
 - ii. using a cotton bud and methylated spirits.

To clean the relevant parts, you should press the 'eject' button so that the door is open. Ensure that the power is switched off, then press the 'play' key, which will raise both heads and the pinch roller which can then be cleaned with the cotton bud and methylated spirits.

When carrying out this operation, please be careful not to exert too much force on the cassette door as this may cause damage.

Whilst it is appreciated that using a head cleaning cassette is a more convenient method, this does tend to have a somewhat abrasive action and may increase the wear of the heads.

The cassette parts should be cleaned after approximately 25 hours use. However, it may be necessary to clean the cassette mechanism at specific instances as some cassettes themselves have a deposit of oxide dust which may be deposited on the relevant parts.

SAFETY TEST

PLEASE NOTE: When any work is completed on this unit, correct safety tests must be carried out to ensure continued electrical safety.

PLEASE NOTE: All parts shown with the part number prefix 'S' are Safety Items and must be replaced with similar items having an identical safety specification.

All of these items may be purchased direct from AMSTRAD CONSUMER ELECTRONICS PLC

GENERAL TROUBLE SHOOTING GUIDE

| Symptoms | Fault | Cure |
|---|---|--|
| All functions on unit fail to operate. | Lack of power supply. | Check mains plug/mains fuse. |
| All functions fail to operate except record deck mechanism. | Fuse F501 blown. If fuse continues to blow, check for faulty mains transformer or meter bulbs. If fuse still continues to blow. | Replace. Check and replace as necessary. Circuit fault somewhere in area of power supply. Check and replace as necessary. |
| All functions fail to operate except record deck mechanism | Fuses 502 or 503 blown. If either fuse continues to blow. If fuse still continues to blow. | Replace as necessary. Check Bridge Rectifier or Power IC. General circuit fault. Check and repair as necessary. |
| VU LEDs not working. | Connecting plug between cassette section and main amplifier not locating properly. | Re-locate. |
| FM Tuner section selects no station but gives loud hiss. | Aerial not connected or aerial faulty. If there is no fault in the aerial. | Check aerial and replace or repair as necessary. General circuit fault in FM stage. Check and repair as necessary. |
| FM Tuner gives some sound but poor quality. | Poor aerial: 75ohm downlead broken. If aerial and leads are ok. | Repair/replace as necessary. General FM circuit fault. Check and repair as necessary. |
| FM works, but stereo light in-operative. | Decoder incorrectly aligned. LED faulty. Check decoder IC UPC1197C. If UPC1197C ok, fault is probably C203 (470pf Poly). | Re-align decoder (see alignment instructions). Replace. Check and replace as necessary. Check and replace as necessary. |
| AM radio section (MW/LW) inoperative or very weak. | Incorrect alignment. If alignment correct. | Check and re-align as necessary. Circuit fault. Repair as necessary. N.B. If replacing any components on the AM section, the set must be re-aligned. |
| Record deck fails to operate mechanically. | Wire disconnected from power supply. Motor fault. Belt disconnected. | Repair as necessary. Repair/replace as necessary. |
| Record deck operates mechanically but gives weak or distorted sound on both channels. | Stylus damaged. Stylus not located correctly in cartridge. Cartridge faulty. | Replace. Re-locate. Replace. |
| Record Deck operates mechanically but gives no sound on either or one channel. | Cartridge faulty. Wiring between cartridge and amplifier section disconnected. | Replace. |
| Record deck wow or flutter. | Belt slipping or stretched. | Clean, relocate or replace as necessary. |
| Record deck speed control inoperative. | Speed control IC faulty. | Check and replace as necessary. |

| Symptoms | Fault | Cure |
|--|--|--|
| Cassette deck mechanism not turning. | Connecting plug between cassette section and main amplifier not locating. Motor faulty. Drive belt not in position. Cassette jammed. General mechanical fault in cassette mechanism. | Re-locate. Check and replace as necessary. Re-position drive belt. Check for stretching of the belt and replace if necessary. Replace cassette. Check and repair as necessary. |
| Cassette speed varies (wow and flutter) | Dirty or worn pinch roller assembly. Drive belt in incorrect position. Motor faulty. General mechanical fault in cassette mechanism. | Clean or replace as necessary. Re-position drive belt or replace if worn or stretched. Check and replace as necessary. Check and repair as necessary. |
| Poor quality of recording or playback. | Dirty R/P Head. R/P Head picks up dust deposit almost constantly. R/P Head worn. Pin on connecting plug between cassette circuit and amplifier circuit not locating properly. General electronic fault on Cassette | Clean as necessary. Head requires demagnetisation. Replace. N.B. Please refer to cassette re-alignment instructions. Re-locate plug correctly. Check and repair as necessary. |
| When making new recordings, old recordings not erasing properly. | Faulty erase head. Wire disconnected from erase head. Faulty oscillator coil (L303). | Replace. Repair as necessary. Check and replace as necessary. |
| VU LEDs not working correctly. | Faulty leads from main amplifier and cassette. LEDs faulty. | Check and repair as necessary. Replace and re-adjust. |
| Severe hum on one or both channels with volume at minimum. | Output IC faulty. | Check and replace. |
| Hum on one or both channels at high volume only. | General circuit fault. | Check and repair as necessary. |
| One channel not working. | Check speaker and speaker leads by reversal. | Repair or replace as necessary. |
| One channel not working and blows fuse(s) 502 or 503. | Output IC faulty. | Check and replace as necessary. |
| Volume or tone controls crackling when operated. | Dirty or worn potentiometers. | Spray with switchclean or replace if necessary. |
| Output LEDs not working correctly. | Faulty LEDs. Fault on LED PCB. | Replace as necessary. Check and repair as necessary. |
| Sound through headphones but not speakers, one or both channels. | Headphone socket faulty. Lead disconnected between 'phone socket and speaker socket. Speaker socket faulty. | Check and replace. Check and repair as necessary. Check and replace as necessary. |
| One speaker gives distorted sound. | Faulty speaker. Check by reversal of speakers. If reversal of speakers demonstrates fault in amplifier section, faulty power IC. If fault condition persists, general amplifier fault. | Repair and replace as necessary. Check and replace. Check and repair as necessary. |

SAFETY TEST PROCEDURE

These tests should be applied to the set after any work is carried out. These tests must be done to the set before the six screw blanking plates are fitted to the cabinet.

REQUIRED TEST EQUIPMENT

1. Flash Test Generator capable of testing at 2.2kV AC.
2. Megger tester rated at 500V DC.
3. Instrument capable of testing resistance down to 0.1ohm at 10amps.

TEST PROCEDURE

1. Stand on bench clear of all metal objects.
No leads should be connected to the unit.
Ensure that the on/off switch is in the ON position.
2. Set Flash test generator to 2.2kV AC.
Connect 1 pole to the live and neutral mains lead connected together and flash test the following points:
 - a) The headphone socket ring.
 - b) The rings of both microphone sockets.
 - c) The record deck transit screw.
 - d) All control knobs and buttons.
 - e) The underneath of the front panel, below the RECORD LEVEL knob.
 - f) The back panel.
3. Connect the megger tester to the live and neutral mains lead connected together and megger test the following points:
 - a) The headphone socket ring.
 - b) The rings of both microphone sockets.
 - c) The record deck transit screw.
 - d) All control knobs and buttons.
 - e) The underneath of the front panel, below the RECORD LEVEL knob.
 - f) The back panel.
4. Check that the earth lead continuity is below 0.5 ohms at 10amps between the mains earth lead core and the record deck transit screw.

CAUTION:

High voltages may be present on a faulty set and care should be taken to avoid electric shocks.

Certain components within this set are specific safety items and must be replaced with similar items which comply to the same safety specification.

All such parts may be obtained direct from AMSTRAD CONSUMER ELECTRONICS PLC

ALIGNMENT INSTRUCTIONS

Equipment required: VTVM; AM/FM Band SSG; Loop Antenna; AM/FM IF Genoscope; Non Metallic Trimming Tool;
Dummy Load – 470K; Oscilloscope.

AM Alignment

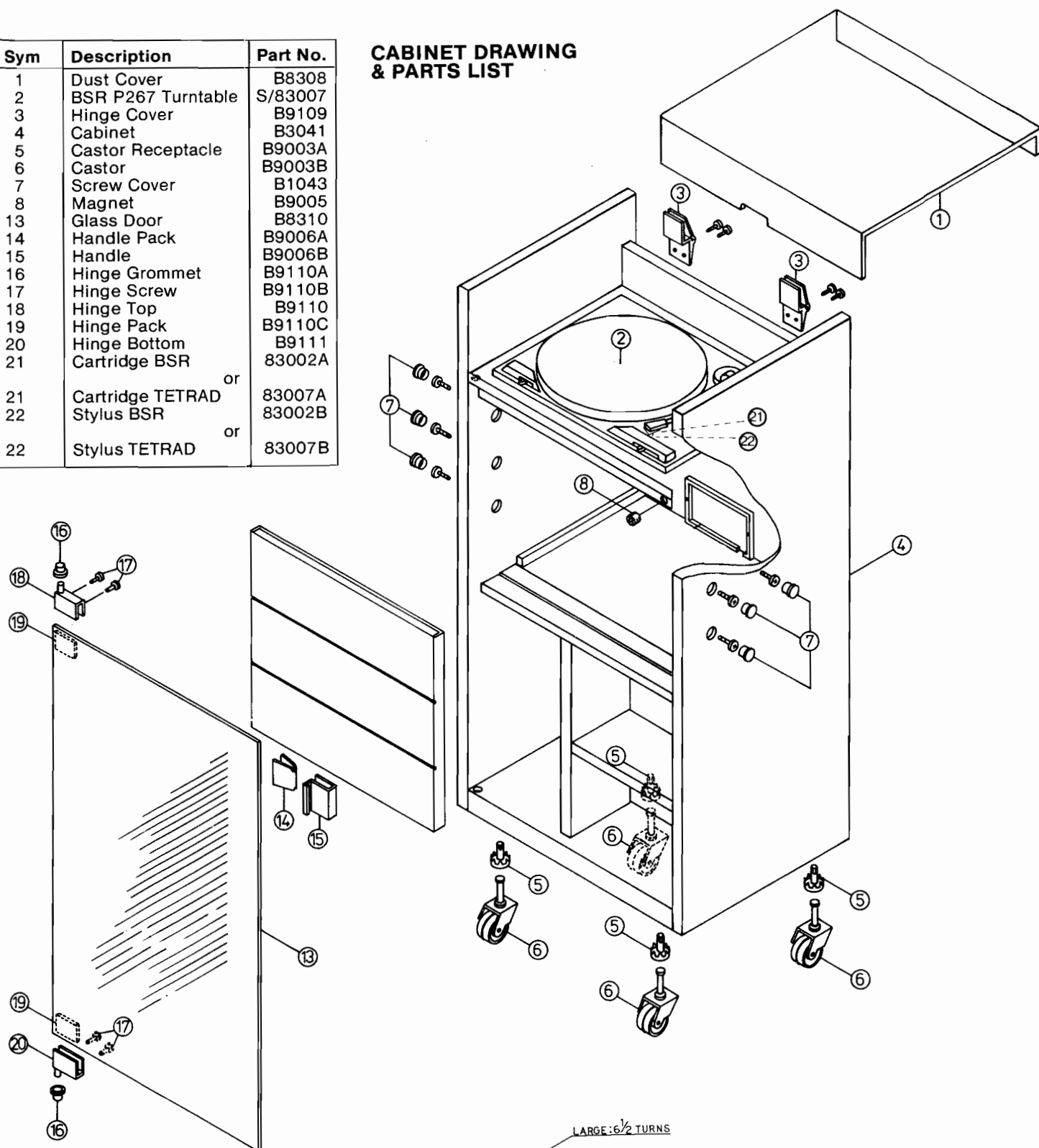
| Step | FUNCTION | SIGNAL IN | SIGNAL OUT | METHOD | REMARKS |
|------|--|---|---|---|--|
| 1. | AM IF Alignment at 468KHz. | Inject signal at TP1 from AM IF SG. Select 468KHz AS IF. | Connect G'scope at TP4. | Adjust IFT 103 and IFT 104 to get max signal output on 'scope. | 1. Ensure set switched to MW band. - 2. Vol control max. Tone control at centre. 3. Sig. input optimum to avoid AGC action. |
| 2. | REPEAT STEP 1 UNTIL NO FURTHER IMPROVEMENT IS OBSERVED. | | | | |
| 3. | MW Osc. Alignment at 525KHz. | Connect loop antenna to the ferrite rod. Inject signal from AM SSG at 525KHz. | Connect VTVM and O'scope across speaker output via 470K dummy load. | Adjust T101 to obtain max sig. output on the meter and 'scope. | 1. Ensure set tuned to 525KHz. 2. Vol control max. Tone control at centre. 3. Sig. input optimum to avoid AGC action. |
| 4. | MW Osc. Alignment at 1650KHz. | Connect loop ant. to the ferrite rod. Inject sig from AM SSG at 1650KHz. | Connect VTVM and O'scope across speaker output via 470K dummy load. | Adjust TC 105 to obtain max sig output on the meter. | 1. Ensure set tuned to 1650KHz. 2. Vol control max. Tone control at centre. 3. Sig. input optimum to avoid AGC action. |
| 5. | REPEAT STEPS 3 & 4 UNTIL NO FURTHER IMPROVEMENT OBTAINED | | | | |
| 6. | MW aerial alignment at 600KHz. | Connect loop ant. to the ferrite rod to inject sig from AM SSG at 600KHz. | Connect VTVM and O'scope across speaker output via 470K dummy load. | Adjust L104 to obtain max sig. output on the meter and scope. | 1. Ensure set tuned to 600KHz. 2. Vol control max. Tone control at centre. 3. Sig. input optimum to avoid AGC action. |
| 7. | MW aerial alignment at 1400KHz. | Connect loop ant. on the ferrite rod to inject sig from AM SSG at 1400KHz. | Connect VTVM and O'scope across speaker output via 470K dummy load. | Adjust TC 103 to obtain max sig output on the meter & scope. | 1. Ensure set tuned to 1400KHz. 2. Vol control max. Tone control at centre. 3. Sig. input optimum to avoid AGC action. |
| 8. | REPEAT STEPS 6 & 7 UNTIL NO FURTHER IMPROVEMENT | | | | |
| 9. | LW Osc and aerial alignment at 140KHz. | Connect loop ant to ferrite rod. Inject 140KHz from AM SSG. | Connect VTVM and O'scope across speaker output via 470K dummy load. | Adjust T102 and L104 to obtain max sig output on the meter and scope. | 1. Ensure set switched to LW. 2. Set tuned to 140KHz 3. Vol control max. Tone control at centre. 4. Sig. input optimum to avoid AGC action. |
| 10. | LW Osc alignment at 280KHz. | Connect loop ant to ferrite rod. Inject 280KHz from AM SSG. | Connect VTVM and O'scope across speaker output via 470K dummy load. | Adjust TC 106 and TC 104 to obtain max sig output on the meter and scope. | 1. Ensure set switched to LW. 2. Vol control max. Tone control at centre. 3. Sig. input optimum to avoid AGC action. |
| 11. | REPEAT STEPS 9 & 10 UNTIL NO FURTHER IMPROVEMENT | | | | |

FM ALIGNMENT

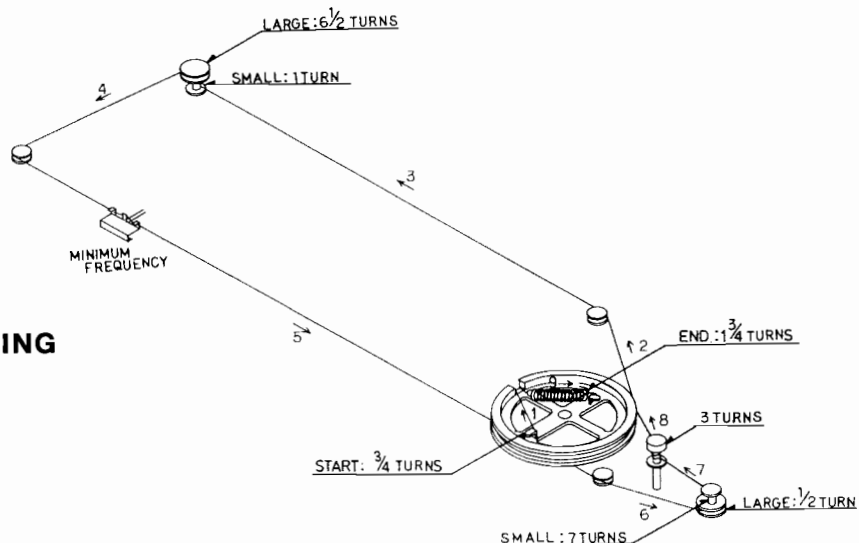
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|-----|---|--|---|---|--|
| 1. | FM IF alignment at 10.7MHz. | Inject 10.7MHz signal from FM IF SSG at TP2. | Connect O'scope to TP5. | Adjust T101 to obtain max output on the scope with a symmetrical 'S' curve centered at 10.7MHz. | 1. Ensure set switched to FM. 2. Ensure stereo/mono sw switched to mono. 3. Sig. input optimum to avoid AGC action. |
| 2. | FM IF alignment at 10.7MHz. | Inject 10.7MHz signal from FM IF SSG at TP2. | Connect O'scope to TP5. | Adjust T102 to obtain symmetrical 'S' curve. | 1. Ensure set switched to FM. 2. Ensure stereo/mono sw switched to mono. 3. Sig. input optimum to avoid AGC action. |
| 3. | REPEAT STEPS 1 & 2 UNTIL NO FURTHER IMPROVEMENT | | | | |
| 4. | FM Osc alignment at 86.5MHz. | Inject 86.5MHz signal from FM IF SSG at J101. | Connect scope & VTVM across dummy load. | Adjust L103 to obtain max output on the meter. | 1. Ensure set tuned to 86.5MHz. 2. Ensure stereo/mono sw switched to mono. 3. Sig. input optimum to avoid AGC action. |
| 5. | FM Osc alignment at 109.5MHz. | Inject 109.5MHz signal from FM IF SSG at J101. | Connect scope & VTVM across dummy load. | Adjust TC2 to obtain max output on the meter. | 1. Ensure set tuned to 109.5MHz. 2. Ensure stereo/mono sw switched to mono. 3. Sig. input optimum to avoid AGC action. |
| 6. | REPEAT STEPS 4 & 5 UNTIL NO FURTHER IMPROVEMENT | | | | |
| 7. | FM Osc tracking at 90MHz. | Inject 90MHz signal from FM IF SSG at J101. | Connect scope & VTVM across dummy load. | Adjust L102 to obtain max output on the meter. | Ensure set tuned to 90MHz, vol max, tone control to centre sig input optimum to avoid AGC action. |
| 8. | FM Osc tracking at 106MHz. | Inject 106MHz signal from FM IF SSG at J101. | Connect scope & VTVM across dummy load. | Adjust TC1 to obtain max output on the meter. | Ensure set tuned to 106MHz, vol max, tone control to centre sig input optimum to avoid AGC action. |
| 9. | REPEAT STEPS 7 & 8 UNTIL NO FURTHER IMPROVEMENT | | | | |
| 10. | FM MXP adjustment. | Set tuned to a strong stereo station. | Monitor stereo beacon. | Adjust VR201 to get the st. beacon on. | 1. Ensure set switched to FM. 2. Ensure stereo/mono sw to stereo. FM alignment now complete. |

| Sym | Description | Part No. |
|-----|--------------------|----------|
| 1 | Dust Cover | B8308 |
| 2 | BSR P267 Turntable | S/83007 |
| 3 | Hinge Cover | B9109 |
| 4 | Cabinet | B3041 |
| 5 | Castor Receptacle | B9003A |
| 6 | Castor | B9003B |
| 7 | Screw Cover | B1043 |
| 8 | Magnet | B9005 |
| 13 | Glass Door | B8310 |
| 14 | Handle Pack | B9006A |
| 15 | Handle | B9006B |
| 16 | Hinge Grommet | B9110A |
| 17 | Hinge Screw | B9110B |
| 18 | Hinge Top | B9110 |
| 19 | Hinge Pack | B9110C |
| 20 | Hinge Bottom | B9111 |
| 21 | Cartridge BSR | 83002A |
| | or | |
| 21 | Cartridge TETRAD | 83007A |
| 22 | Stylus BSR | 83002B |
| | or | |
| 22 | Stylus TETRAD | 83007B |

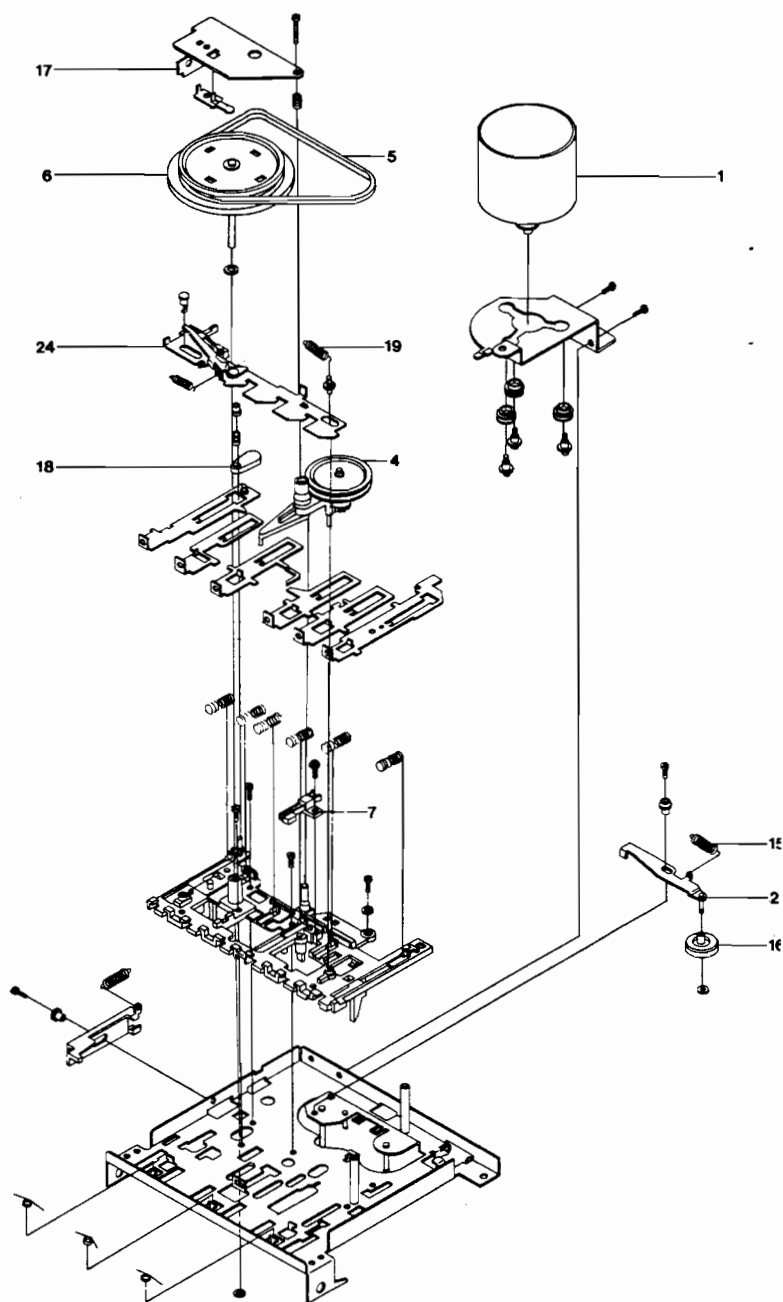
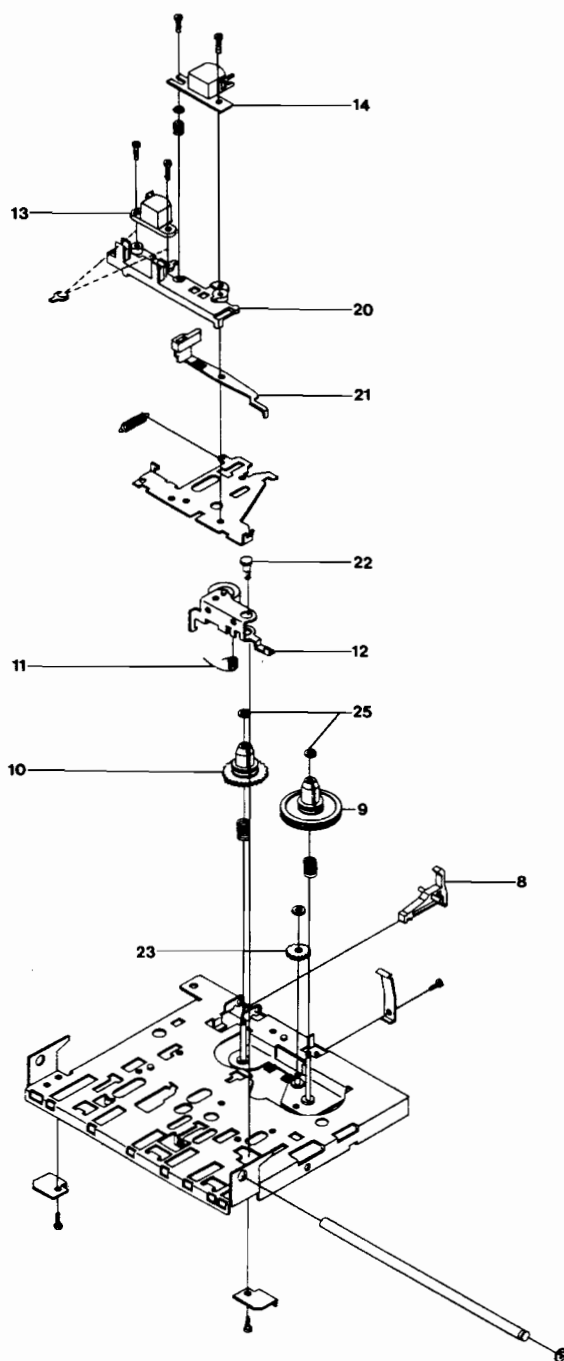
CABINET DRAWING & PARTS LIST



DIAL CORD STRINGING



CASSETTE MECHANISM



| No. | Description | Part No. |
|-----|---------------------|----------|
| 1 | Motor Assy | 809151 |
| 2 | R.W. Idler Arm Assy | 809152 |
| 4 | Idler Arm Assy | 809154 |
| 5 | Belt Main | 809155 |
| 6 | Flywheel | 809156 |
| 7 | Leaf Switch | 809157 |
| 8 | Record Safety Lever | 809158 |
| 9 | Take Up Spool Assy | 809159 |
| 10 | Rewind Spool Assy | 809160 |
| 11 | Pinch Roller Spring | 809161 |
| 12 | Pinch Roller | 809162 |
| 13 | Head Erase | 700017 |
| 14 | Head R.P.B. | 700016 |

| No. | Description | Part No. |
|-----|------------------------|----------|
| 15 | Idler Spring | 809165 |
| 16 | Idler F.F./R.W. | 809166 |
| 17 | Flywheel Holder | 809167 |
| 18 | Pause Lock Lever | 809168 |
| 19 | Spring Locking Plate | 809169 |
| 20 | Head Base | 809170 |
| 21 | Auto Stop Arm Assy | 809171 |
| 22 | Stopper, Locking Plate | 809172 |
| 23 | F.F. Gear | 809173 |
| 24 | Locking Plate | 809174 |
| 25 | Poly Washer | 809175 |

CASSETTE ALIGNMENT INSTRUCTIONS

Equipment required: Double Beam Oscilloscope; Frequency Counter; RMS Meter; Non-Metallic Trimming Tool; 6.8kHz Test Tape; 1kHz Test Tape.

| Step | FUNCTION | SIGNAL IN | SIGNAL OUT | METHOD | REMARKS |
|------|----------------------------|--------------------------|---|---|---|
| 1 | Bias frequency adjustment. | Switch SW 301 to record. | Monitor 'scope or freq. counter from junction C328, C331. | Adjust L303 to give 625KHz. | Ensure the AFC switch is off. |
| 2 | Bias trap adjustment. | Switch SW 301 to record. | RMS Meter across R301/302 in turn. | Adjust L301/302 to get the same voltage at R301 & R302. | Voltage should not change if the AFC sw is on or off. |
| 3 | Bias level adjustment. | Switch SW 301 to record. | RMS Meter across R301/302 in turn. | Adjust VR 301/VR 302 to show 4.5mV. | Ensure AFC switch is off. |
| 4 | Head azimuth adjustment. | 6.8KHz Test tape. | Double beam 'scope at speaker sockets. | Adjust azimuth screw for max amplitude on both channels ensuring both signals in phase. | Ensure set switched to tape. |
| 5 | Tape speed adjustment. | 1KHz Test tape. | Frequency counter at speaker socket. | Adjust motor with non-metallic trimming tool for correct frequency. | Ensure set switched to tape. |

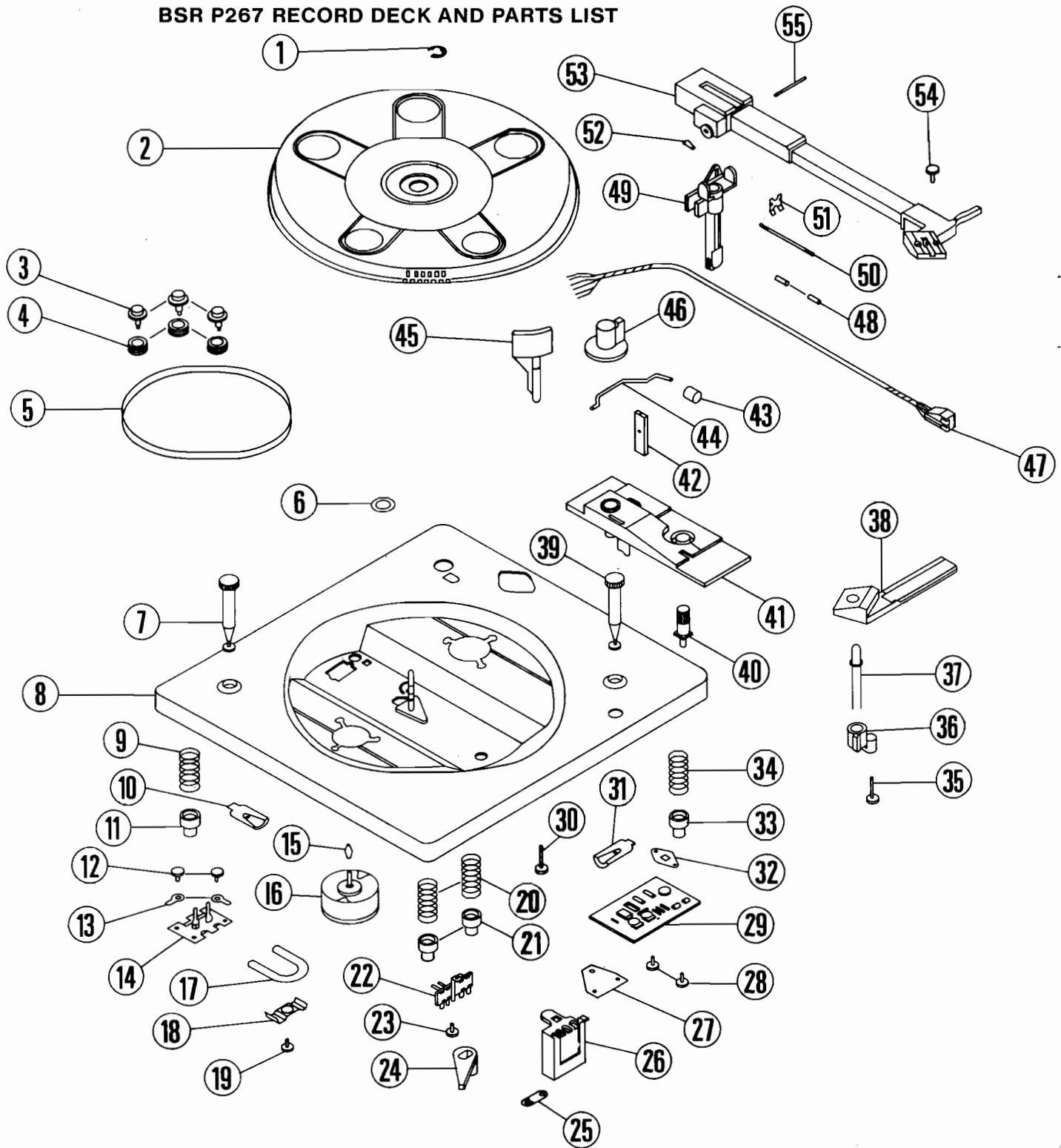
CASSETTE DECK MECHANISM – GENERAL MAINTENANCE

Before attempting any specific fault-finding on the cassette mechanisms, it is recommended that the following checks and maintenance procedures be carried out.

- 1. R/P HEAD (Symbol 14)**
Thoroughly clean the head and examine for signs of wear; replace if worn; de-magnetise.
- 2. PINCH-ROLLER ASSEMBLY (Symbol 12)**
Thoroughly clean, check general condition. If rubber roller is in any way distorted, replace the assembly.
Check the tension of the Pinch-Roller Spring, the tension should be 40 to 60gm.
- 3. MAIN BELT (Symbol 5)**
Ensure the belt is correctly located. Check that it is not stretched or worn and replace if necessary. In any event, remove the belt and clean with methylated spirits.
- 4. TAKE-UP SPOOL ASSEMBLY (Symbol 9)**
Check the tension of this using a cassette torque meter. The correct reading should be 40gm per cm. A reading of between 30 and 50gm per cm may be regarded as within tolerance.
Should the reading fall below 30gm per cm, it must be adjusted to give the correct torque.
If it cannot be adjusted it should then be replaced.
- 5. REWIND IDLER ASSEMBLY (Symbol 2)**
Check the tension with the cassette torque meter using the rewind function.
The torque should be 100gm per cm but a reading of between 80 and 110gm per cm may be considered within tolerance.
If the torque falls below 80gm per cm, it should be adjusted to give the correct reading.
If it will not adjust sufficiently, it should be replaced.
- 6. MOTOR (Symbol 1)**
Ensure that the motor is securely mounted and that the motor rubbers are in good condition.
- 7. FLY-WHEEL (Symbol 6)**
Check that the Fly-wheel spindle is not worn or bent and that it is securely seated in its bearing.
- 8. INTERNAL MECHANISM**
After prolonged use, the internal mechanism will normally contain substantial deposits of oxide dust.
Ensure that these are thoroughly cleaned.

There are no places on either mechanism which require any oil or grease and the application of any such lubrication is likely to seriously harm the internal workings of the mechanism.

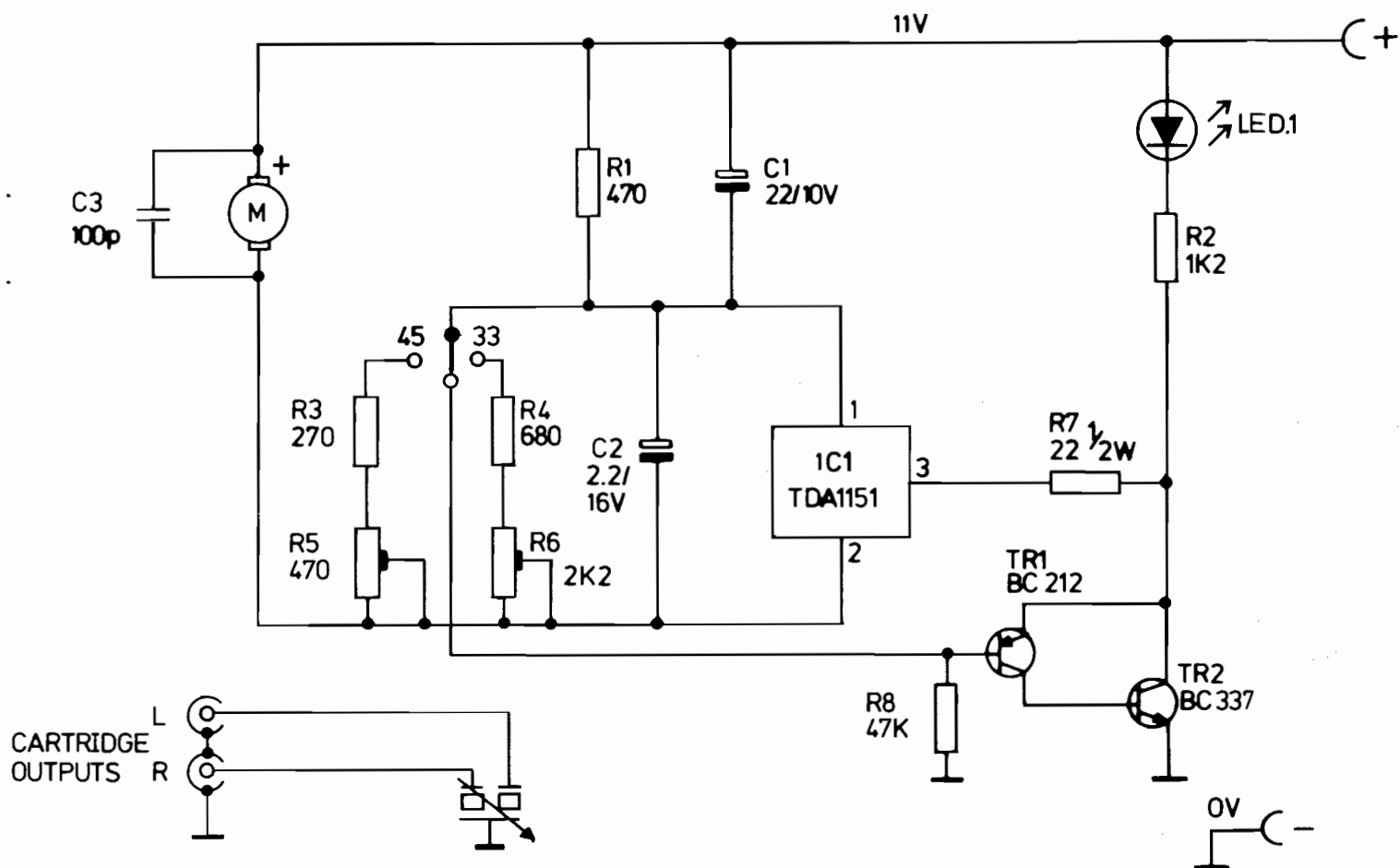
BSR P267 RECORD DECK AND PARTS LIST



| Item | Part No. | Description |
|------|----------|--|
| 1 | A102110 | Circlip |
| 2 | A117441 | Turntable Assembly |
| 3 | A117382 | Motor Mounting Screw (3 off) |
| 4 | A106210 | Grommet (3 off) |
| 5 | A114446 | Drive Belt |
| 6 | A114621 | Thrust Washer |
| 7 | A104189 | Transit Screw |
| 8 | B117437 | Mainplate Welding & Riveting Assembly |
| 9 | A114759 | Unit Mounting Spring |
| 10 | A102166 | Retaining Clip |
| 11 | A106089 | Spring Cup |
| 12 | A106510 | Screw type B No.6 x 6.5 Rec. Pan Hd. (2 off) |
| 13 | A102126 | Solder Tag (2 off) |
| 14 | A102616 | Phono Socket |
| 15 | A116570 | Drive Sleeve |
| 16 | B116574 | D.C. Motor Requirements |
| 17 | A106513 | 76mm of 05 P.V.C. Sleeving |
| 18 | A102718 | Cable Clamp |
| 19 | A114784 | Screw type B.T.6-20 x 8 Rec. Pan Hd. |
| 20 | A114759 | Unit Mounting Spring (2 off) |
| 21 | A106089 | Spring Cup (2 off) |
| 22 | A106206 | Tag Mounting Strip |
| 23 | A106510 | Screw type B No.6 x 6.5 Rec. Pan Hd. |
| 24 | A117393 | P.U. Hinge Retainer |
| 25 | A106749 | 4B.A. Tag Lockwasher |
| 26 | A111516 | Molex Plug |
| 27 | A104865 | Insulating Strip |
| 28 | A105267 | Screw type B.T.4-24 x 8 Rec. Pan Hd. (2 off) |

| Item | Part No. | Description |
|------|----------|---|
| 29 | A300126 | On/Off Speed Control Board (B40) |
| 30 | A106512 | Screw type B.T.4-24 x 16 Rec. Pan Hd. |
| 31 | A102166 | Retaining Clip |
| 32 | A116564 | Detent Spring |
| 33 | A106089 | Spring Cup |
| 34 | A114759 | Spring (Unit Mounting) |
| 35 | A106512 | Screw type B.T.4-24 x 16 Rec. Pan Hd. |
| 36 | B117369 | L.E.D. Mounting Clip |
| 37 | A325010 | L.E.D. Requirements |
| 38 | A117464 | Escutcheon Printing |
| 39 | A104189 | Transit Screw |
| 40 | A116565 | Knob Spindle |
| 41 | A117461 | Control Escutcheon Printing |
| 42 | A117376 | Pick-Up Rest |
| 43 | A114155 | Cue Knob |
| 44 | A117378 | Raising Arm |
| 45 | B117375 | Raising Pad |
| 46 | B116562 | Knob |
| 47 | A117439 | P.U. Lead Assembly |
| 48 | A103373 | Securing Rubber (2 off) |
| 49 | C117420 | Pick-Up Hinge |
| 50 | A105237 | P.U. Balance Spring |
| 51 | A105142 | Spring Anchor |
| 52 | A103373 | Securing Rubber |
| 53 | D117379 | Pick-Up Arm |
| 54 | A117483 | Screw type 'Plastite' 4-20 x 6.5 Rec. Pan Hd. (Black) |
| 55 | A117368 | Pivot Pin |

BSR-P267 RECORD DECK CIRCUIT DIAGRAM

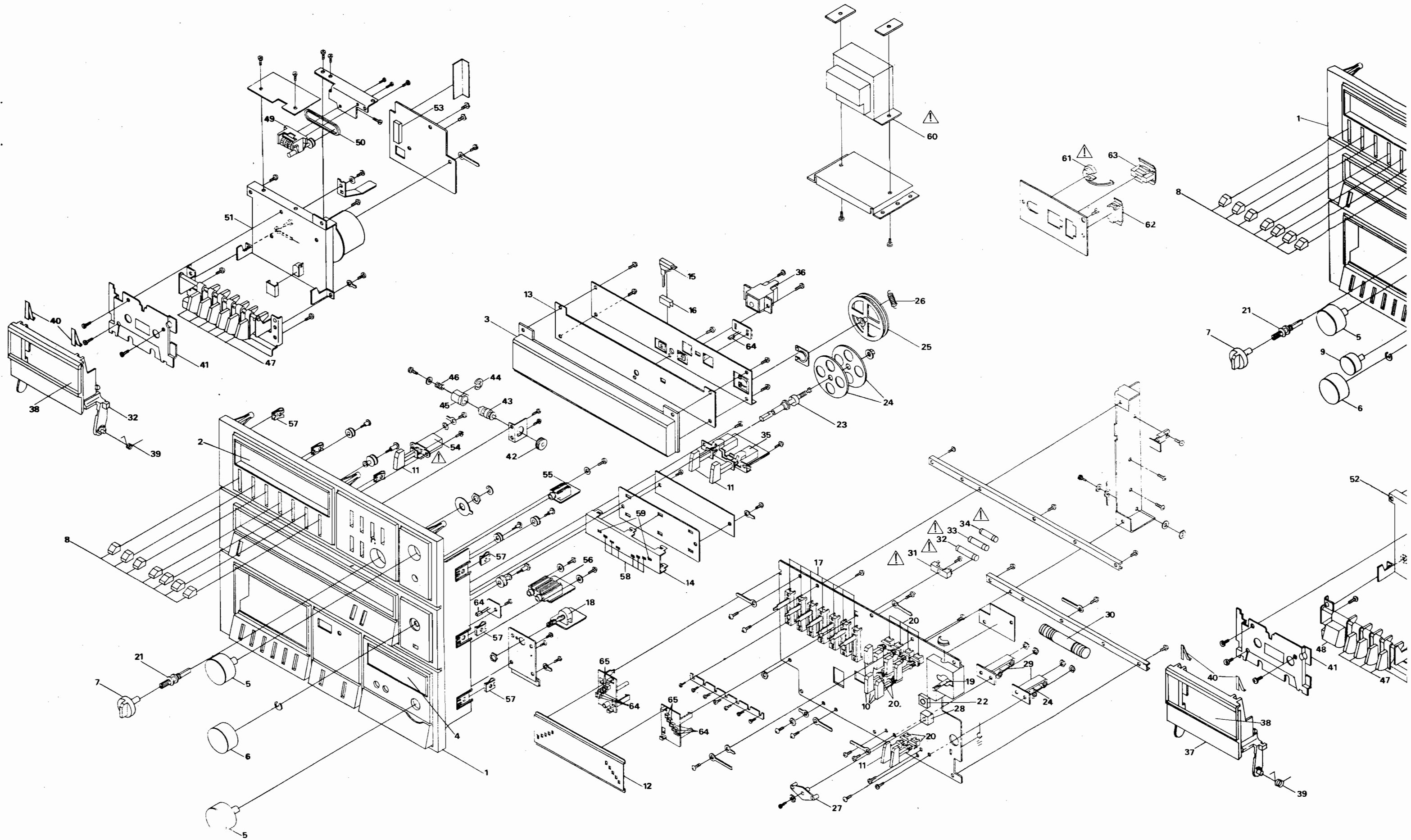


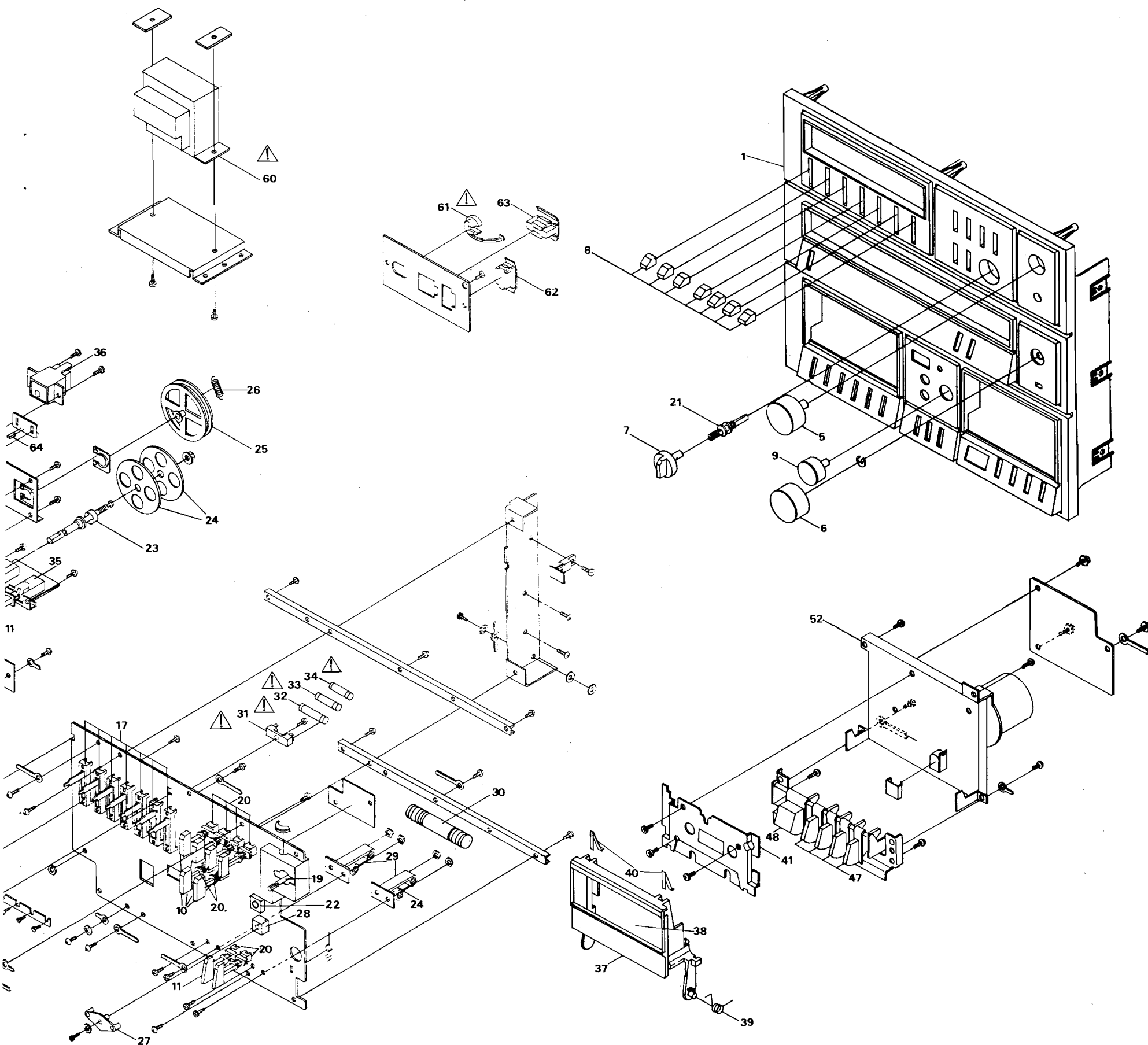
ELECTRICAL PARTS LIST BSR 267

| Circ Ref | Description | Part No. |
|--|-------------------------|----------|
| Resistors ($\frac{1}{4}W/\pm 5\%$) | | |
| R1, 5 | 470ohm | 10048 |
| R2 | 1K2ohm | 10065 |
| R3 | 270ohm | 10042 |
| R4 | 680ohm | 10052 |
| R6 | 2K2ohm | 10069 |
| R8 | 47Kohm | 10101 |
| Resistors ($\frac{1}{2}W/\pm 5\%$) | | |
| R7 | 22ohm | 10039 |
| Capacitors | | |
| C1 | 22mf/10V Electrolytic | 20011 |
| C2 | 2.2mfd/16V Electrolytic | 20021 |
| C3 | 100pf Ceramic | 20416 |
| Transistors | | |
| TR1 | BC212 | 50009 |
| TR2 | BC337/25 | 50002 |
| IC | | |
| IC1 | TDA1151 | 806204 |

Information on Record Deck
published by permission of BSR.


CHASSIS DRAWING



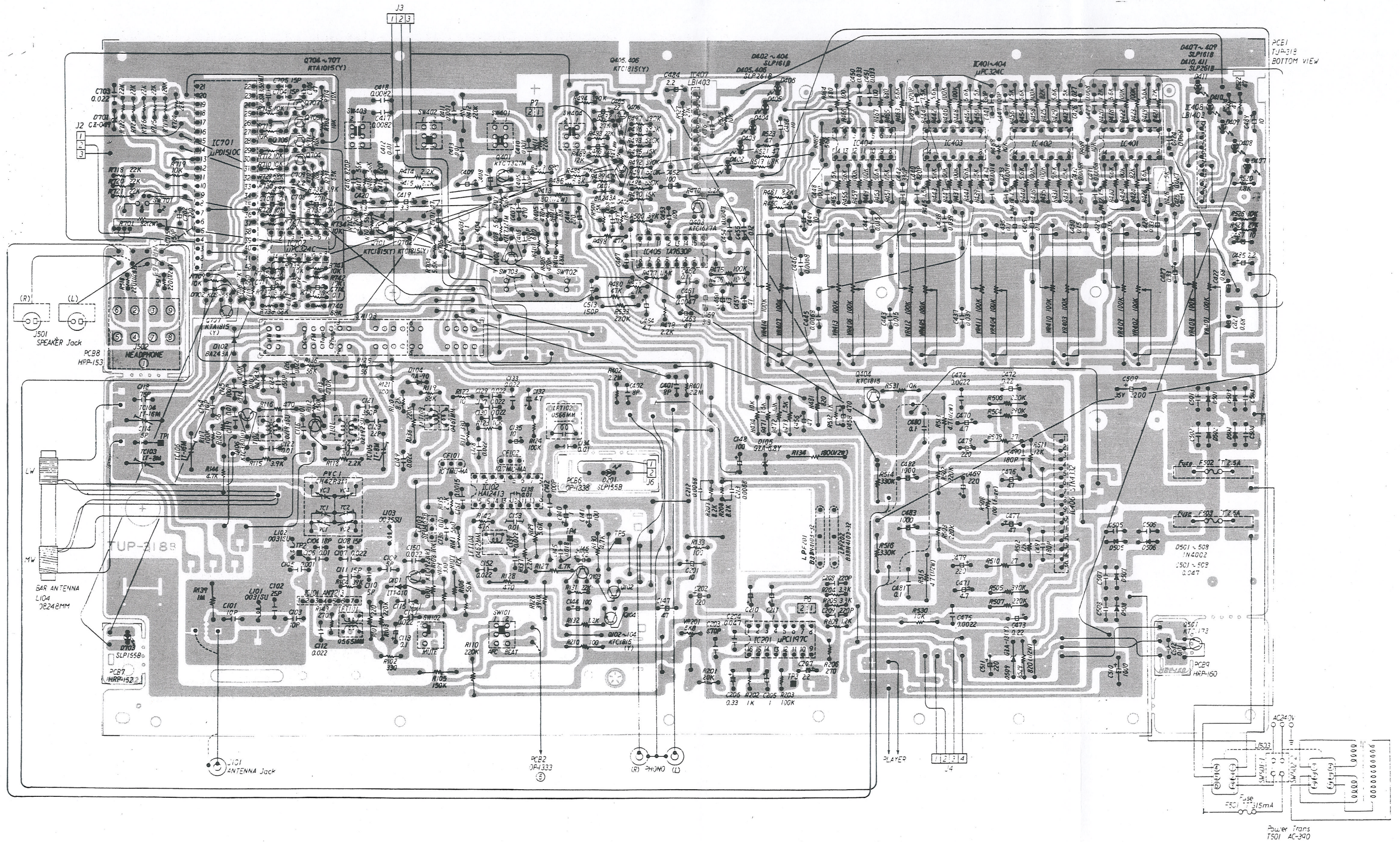


CHASSIS PARTS LIST TS80/88

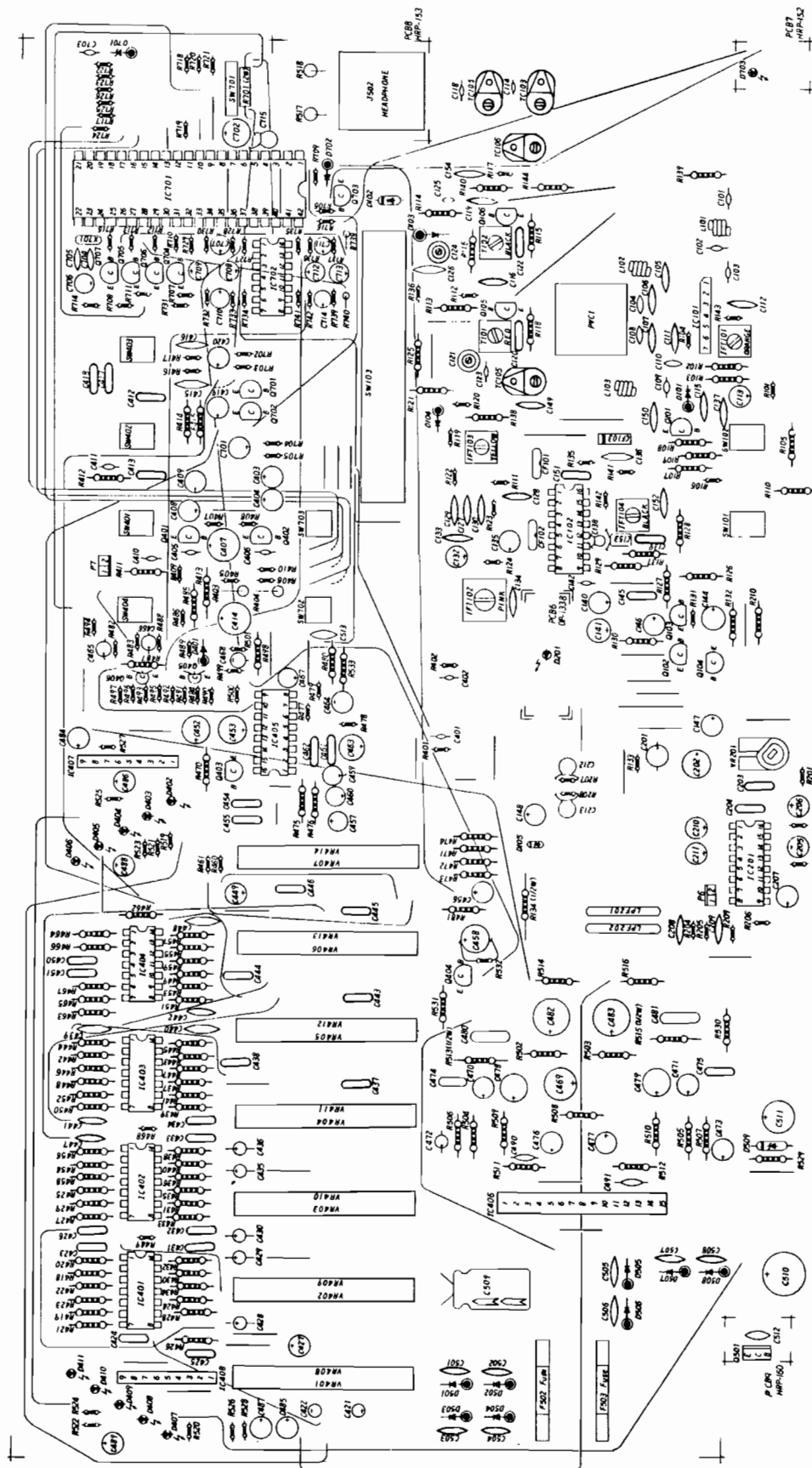
| Sym | Description | TS-80 Part No. | TS-88 Part No. |
|-----|---------------------------------|-------------------|-------------------|
| 1 | Front Panel | 800001 | 800801 |
| 2 | Graphic Equaliser Lens | 800002 | 800002 |
| 3 | Dial Lens | 800003 | 800003 |
| 4 | Record Level Lens | 800004 | 800004 |
| 5 | Volume Knob | 800005 | 800005 |
| 6 | Tun. Record Level Knob | 800006 | 800006 |
| 7 | Select Knob | 800007 | 800007 |
| 8 | Graphic Tone Knob | 800008 | 800008 |
| 9 | Record Level Knob | 800009 | 800809 |
| 10 | Push Button Knob (A) | 800010 | 800010 |
| 11 | Push Button Knob (B) | 800011 | 800011 |
| 12 | Graphic Inlay | 800012 | 800812 |
| 13 | Dial Scale | 800013 | 800013 |
| 14 | VU Meter Inlay | 800014 | 800014 |
| 15 | Pointer | 800015 | 800015 |
| 16 | Carriage Pointer | 800016 | 800016 |
| 17 | Slide Controls | 800017 | 800017 |
| 18 | Record Level Pot | 300133 | 300133 |
| 19 | Volume Switch | 800019 | 800019 |
| 20 | Push Switch | 800020 | 800020 |
| 21 | Selector Shaft | 800021 | 800021 |
| 22 | Selector Switch | 800022 | 800022 |
| 23 | Tuning Shaft | 800023 | 800023 |
| 24 | Tuning Flywheel | 800024 | 800024 |
| 25 | Tuning Drum | 800025 | 800025 |
| 26 | Tuning Spring | 800026 | 800026 |
| 27 | Tuning Coupling | 800027 | 800027 |
| 28 | PVC | 800028 | 800028 |
| 29 | Ferrite Rod Bracket | 800029 | 800029 |
| 30 | Ferrite Rod | 800030 | 800030 |
| 31 | Fuse Holder | S/88020 | S/88020 |
| 32 | T315mA F501 Fuse | S/88150 | S/88150 |
| 33 | T 2.5mA F502 Fuse | S/800033 | S/800033 |
| 34 | T500mA F503 Fuse | S/88005 | S/88005 |
| 35 | Tape Select Switch | 800035 | 800835 |
| 36 | PPM Sensor | 800036 | 800036 |
| 37 | Cassette Door | 800037 | 800837 |
| 38 | Cassette Door Lens | 800038 | 800038 |
| 39 | Eject Spring | 800039 | 800039 |
| 40 | Cassette Spring | 809039 | 809039 |
| 41 | Masking Plate | 809040 | 809040 |
| 42 | Gear | 809042 | 809042 |
| 43 | Shaft (Eject) | 809043 | 809043 |
| 44 | E Ring | 809044 | 809044 |
| 45 | Bearing Shaft | 809045 | 809045 |
| 46 | Spring Eject Shaft | 809046 | 809046 |
| 47 | Cassette Keys | 800047 | 800047 |
| 48 | Play Cassette Key | | 800848 |
| 49 | Counter | 809049 | 809049 |
| 50 | Counter Belt | 809050 | 809050 |
| 51 | Complete Cassette Mechanism (A) | 809051 | 809051 |
| 52 | Complete Cassette Mechanism (B) | | 800052 |
| 53 | Record Play Switch | 800053 | 800053 |
| 54 | ON/OFF Switch | S/35028 | S/35028 |
| 55 | Headphone Socket | 800055 | 800055 |
| 56 | Microphone Socket | 809056 | 809056 |
| 57 | Cabinet Securing Bracket | 800057 | 800057 |
| 58 | Red LED | 400822 | 400822 |
| 59 | Green LED | 400823 | 400823 |
| 60 | Transformer | S/800060 | S/800060 |
| 61 | Mains Lead Restraint | S/250011 | S/250011 |
| 62 | Aerial Socket | 90042 | 90042 |
| 63 | Speaker Socket | 250012 | 250012 |
| 64 | Red LED | 800064 | 800064 |
| 65 | Green LED | 800065 | 800065 |
| | Remote Control Module | 800061 | 800061 |

Note: All parts shown with either the symbol  or with an 'S' prefix on the part numbers, are safety critical items and must be replaced with items having an identical safety specification. All these items may be purchased direct from AMSTRAD CONSUMER ELECTRONICS PLC

MAIN PCB Bottom View

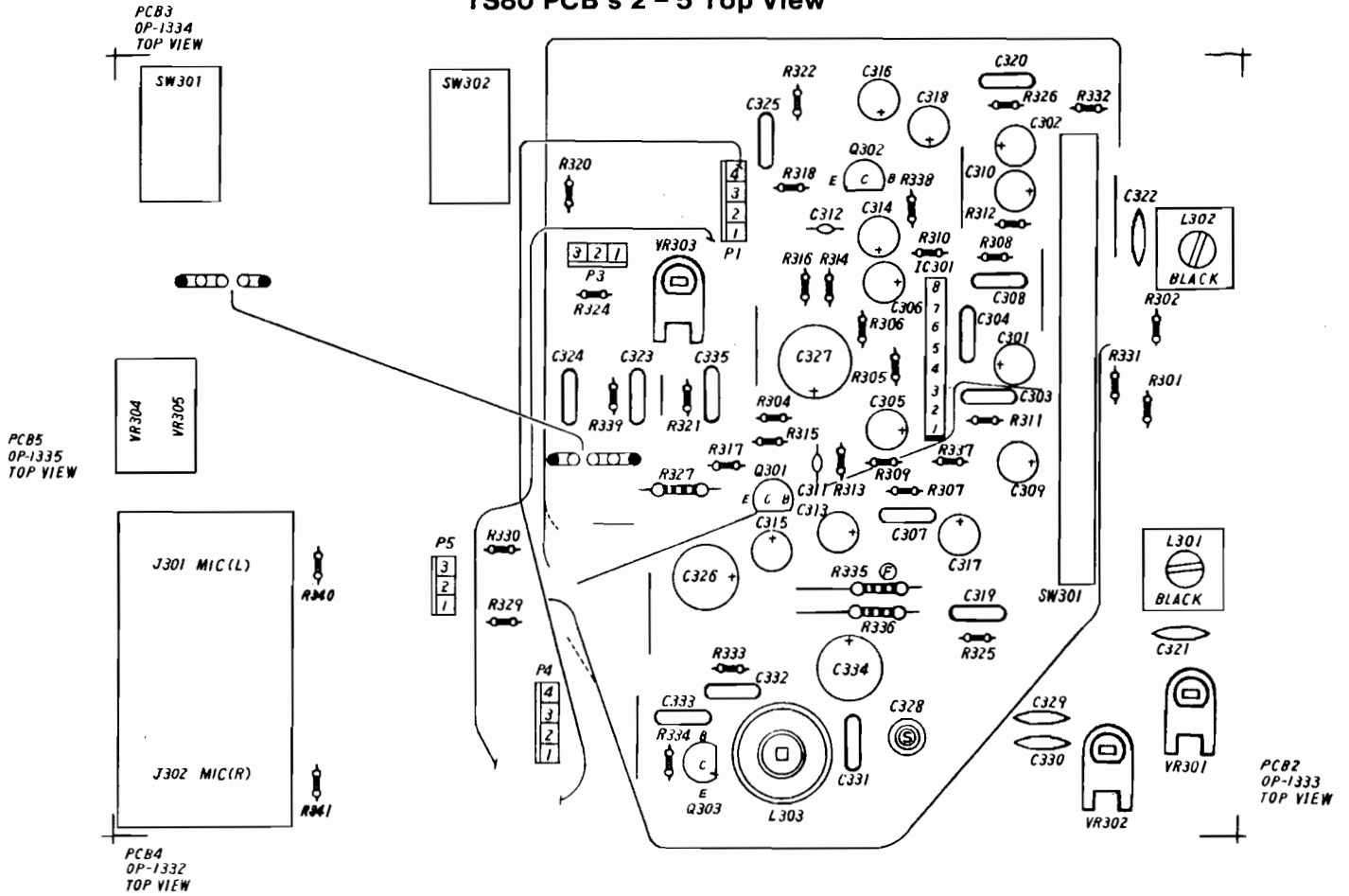


MAIN PCB Top View

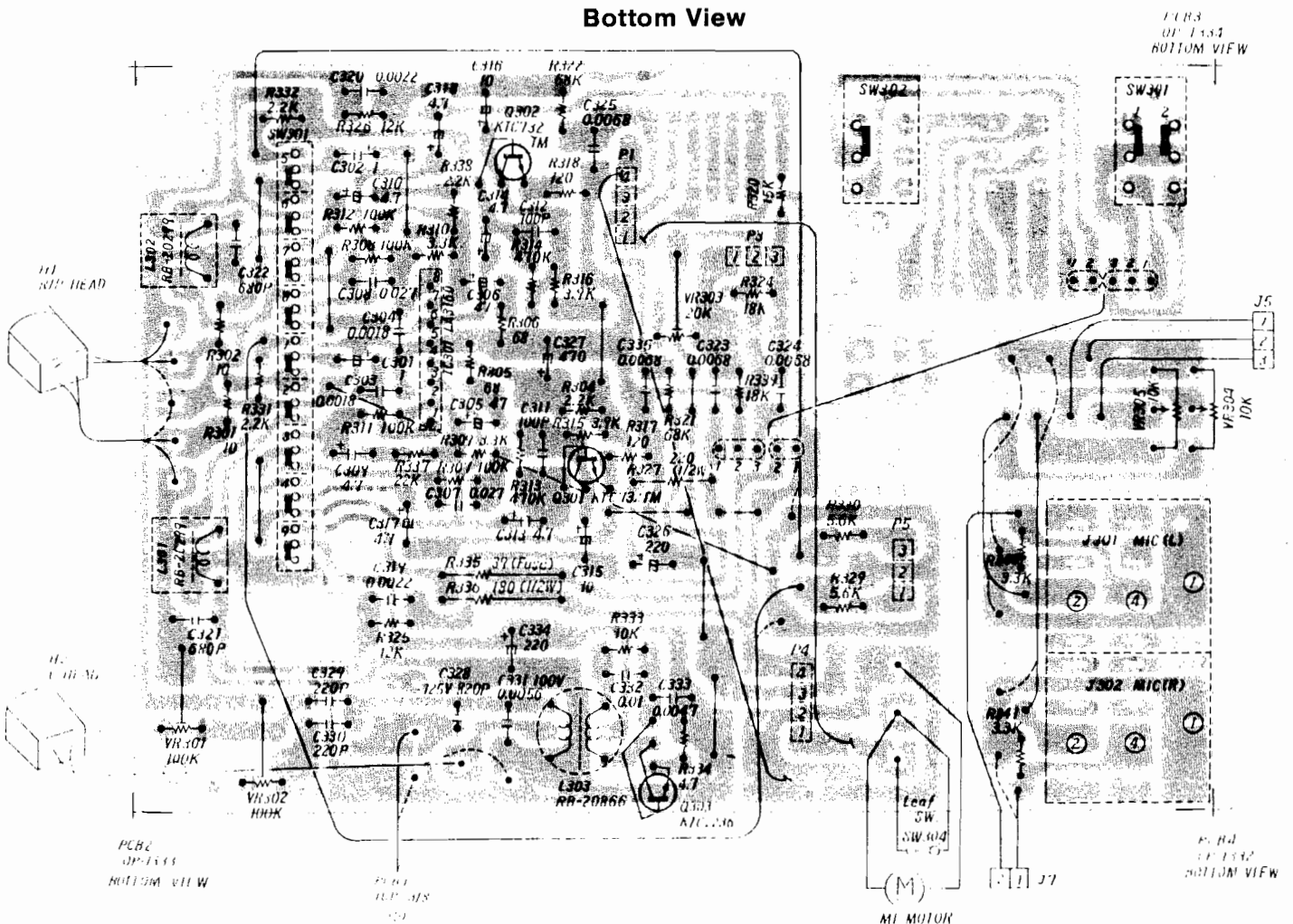


PCB1
TUP-318B
TOP VIEW

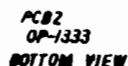
TS80 PCB's 2 - 5 Top View



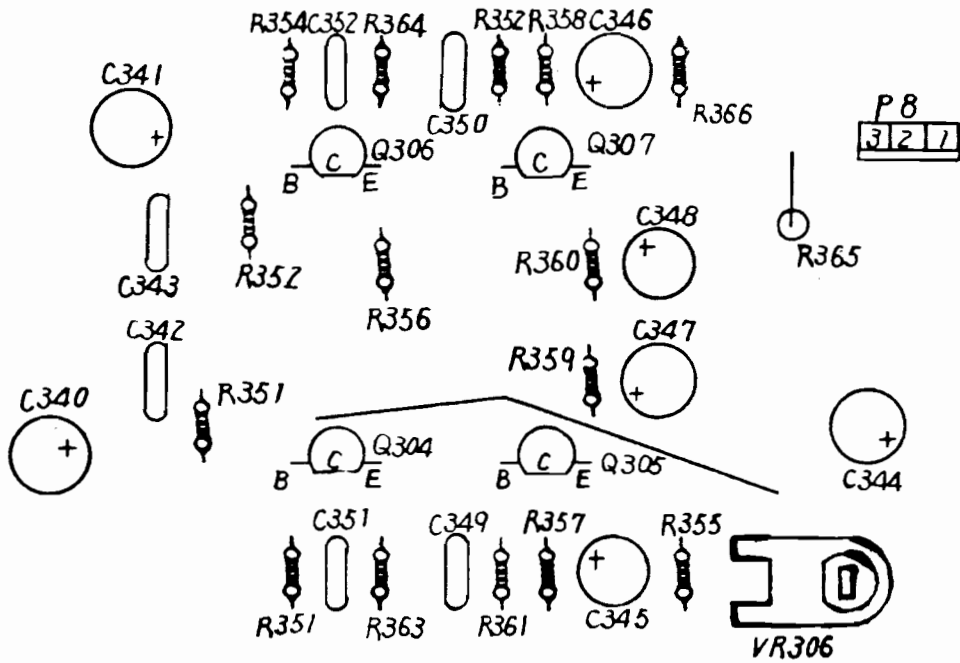
Bottom View



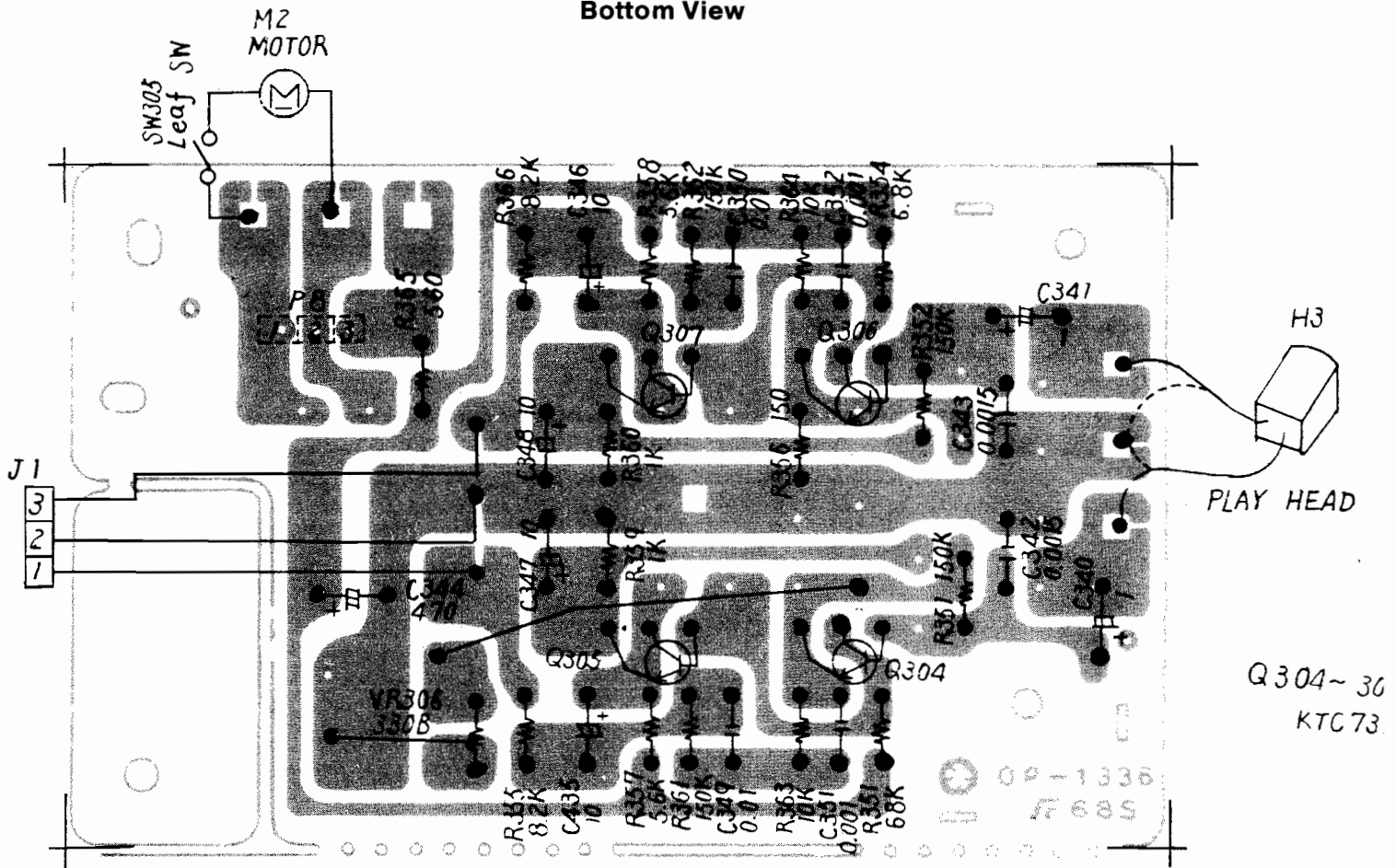
PCB3
0P-1334
BOTTOM VIEW



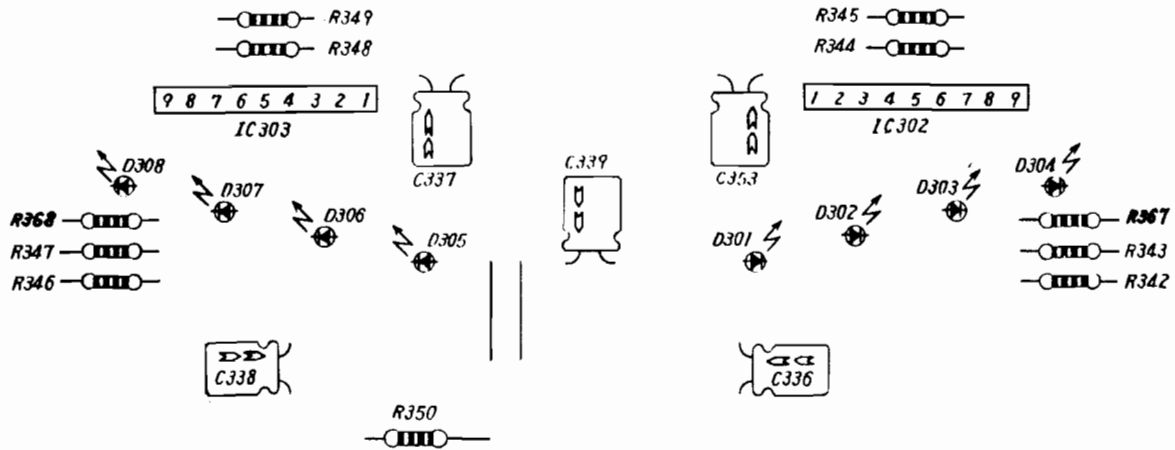
TS88 TAPE II PCB Top View



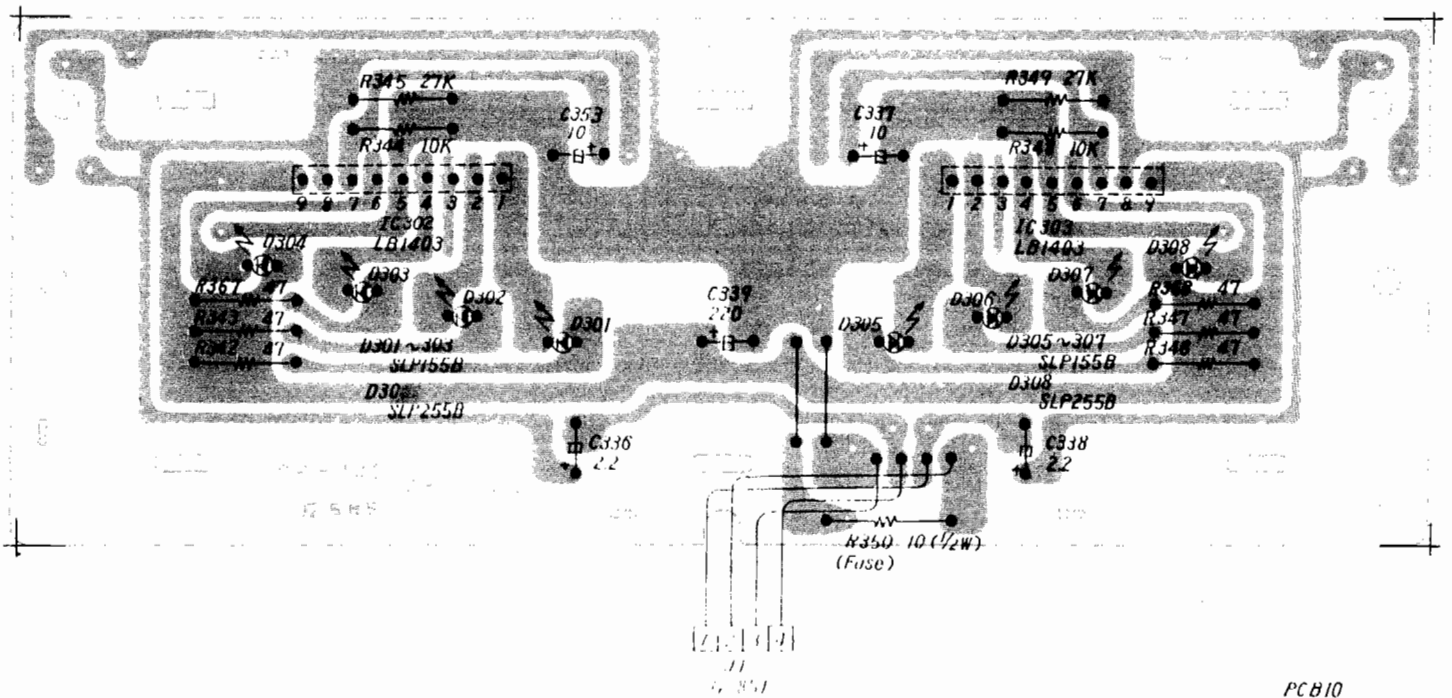
Bottom View



TS80 VU METER PCB Top View



Bottom View



PCB10

ELECTRICAL PARTS LIST


| Value | Circuit Reference | Part No. |
|--------------------------------|---|----------|
| Electrolytic Capacitors | | |
| 0.1uF/50V | C113 | 800210 |
| 0.22uF/50V | C472, 473 | 800211 |
| 1uF/50V | C140, 205, 210, 211, 301, 302, 403, 404, 408, 409, 467, 708, 712, 713 | 20062 |
| 2.2uF/50V | C207, 336, 338, 484, 485, 709 | 809246 |
| 3.3uF/50V | C419, 420, 459, 460, 468 | 20146 |
| 4.7uF/50V | C132, 309, 310, 313, 314, 317, 318, 454, 470, 471 | 20101 |
| 10uF/16V | C135, 201, 315, 316, 337, 353, 449, 486, 487, 488, 489 | 20024 |
| 22uF/10V | C465, 466 | 20025 |
| 47uF/10V | C147, 305, 306, 456, 457, 463, 476, 477, 701, 706 | 20053 |
| 100uF/16V | C141, 144, 148, 452, 453 | 20028 |
| 220uF/16V | C202, 326, 334, 339, 414, 478, 479, 511, 702 | 20029 |
| 220uF/35V | C409 | 20055 |
| 470uF/16V | C327, 407, 458 | 20044 |
| 1000uF/25V | C482, 483, 510 | 20118 |
| 2200uF/35V | C509 | 20119 |
| Mylar Capacitors | | |
| 0.0015uF | C151 | 809231 |
| 0.0018uF | C303, 304, 433, 434 | 809232 |
| 0.0022uF | C319, 320, 474, 475 | 21002 |
| 0.0047uF | C333, 464, 461 | 21004 |
| 0.0056uF | C331 | 21015 |
| 0.0068uF | C212, 213, 323 - 325, 335, 431, 432, 445, 446 | 21024 |
| 0.0082uF | C417, 418 | 21025 |
| 0.01uF | C120, 122, 138, 153, 332, 412, 413 | 21006 |
| 0.015uF | C443, 444 | 809234 |
| 0.018uF | C145 | 809235 |
| 0.022uF | C139, 146 | 21007 |
| 0.027uF | C307, 308, 425, 426 | 21028 |
| 0.033uF | C450, 451 | 21012 |
| 0.039uF | C437, 438 | 21013 |
| 0.047uF | C204 | 21008 |
| 0.068uF | C423, 424 | 809236 |
| 0.1uF | C480, 481, 707, 710, 711, 714 | 21029 |
| 0.12uF | C455, 462 | 21019 |
| Polystyrene Capacitors | | |
| 150pF | C124 | 800235 |
| 350pF | C121 | 800236 |
| 470pF | C203 | 800212 |
| 820pF (125V) | C328 | 22017 |
| Alumi Solid Capacitors | | |
| 0.1uF/25V | C435, 436 | 800213 |
| 0.15uF/25V | C429, 430 | 809242 |
| 0.33uF/25V | C206, 427, 428 | 809243 |
| 0.68uF/25V | C421, 422 | 800214 |

| Value | Circuit Reference | Part No. |
|----------------------------------|-----------------------------|----------|
| Extra Capacitors on TS-88 | | |
| Ceramic Capacitors | | |
| 0.22uF | C128, 129 | 24019 |
| Electrolytic Capacitors | | |
| 1uF/50V | C340, 341 | 20062 |
| 10uF/16V | C345, 348 | 20037 |
| 470uF/16V | C344 | 20044 |
| Mylar Capacitors | | |
| 0.001uF | C351, 352 | 21001 |
| 0.0015uF | C342, 343 | 809231 |
| 0.01uF | C349, 350 | 21006 |
| 0.015uF | C323 - 325, 335, 443, 444 | 809234 |
| ICs | | |
| IC101 | AN7213 | 809201 |
| IC102 | HA12413 | 809202 |
| IC201 | UPC1197C | 800214 |
| IC301 | LA3160 | 901400 |
| IC302, 303, 407, 408 | LB1403 | 809207 |
| IC401 - 404, 702 | UPC3246 | 800215 |
| IC405 | TA7630P | 800216 |
| IC406 | STK4332 | 800217 |
| IC701 | UPC1510C | 800218 |
| Diodes | | |
| D101 | ITT410 Varicap Diode | 920117 |
| D102, 103, 401 | BA243A | 800219 |
| D104 | OA90 | 800220 |
| D105 | 6ZA 6.8Y Zener | 809219 |
| D501 - 508 | IN4002 P. Rectifier | 15008 |
| D509 | G. 13Y Zener | 15005 |
| D701 | CZ. 049 Zener | 800221 |
| D702 | KDS1555 | 800222 |
| Transistors | | |
| Q101 | KTC1923 BF595 | 50014 |
| Q102 - 104, 404 - 406, 701 - 703 | | 50014 |
| Q105, 106 | KTC380 BF595 | 50014 |
| Q301, 302, 401, 402 | KTC732 BC237 | 50016 |
| Q303 | KTC2236 BD370 | 50017 |
| Q403 | KTC 1627 BC237 | 50016 |
| Q501 | KTC1173/2SD313/2N5496 | 50005 |
| Q704 - 707 | KTC1015 BF594 | 50041 |
| Coils Ant Transformers | | |
| L101, 102 | 0031SU FM Ant Coil | 300616 |
| | 0031SU FM RF Coil | |
| L103 | 0035SU FM Osc Coil | 300617 |
| L301, 302 | RB-20299 Trap Coil | 300619 |
| L303 | RB20866 Bias Osc Coil | 300620 |
| T101 | 02192SU MW Osc Coil | 300621 |
| T102 | 02193SU LW Osc Coil | 800223 |
| IFT101 | 0565MM FM IFT | 300623 |
| IFT102 | 0566MM FM IFT | 300624 |
| IFT103 | 0461MM AM IFT | 300625 |
| IFT104 | 0462MM AM IFT | 300626 |
| Miscellaneous | | |
| PVC 1 | CH 42 R311 PVC | 800224 |
| CF101, 102 | 10.7MHz Ceramic Filter | 993034 |
| CF103 | 468KHz Ceramic Filter | 800225 |
| TC103, 105 | 8pF Trimmer | 800226 |
| TC104, 106 | 16pF Trimmer | 800227 |
| LPF201, 202 | B3BN4103-32 Low Pass Filter | 800228 |
| X701 | CSA 3.58MT Ceramic Osc | 800229 |

| Value | Circuit Reference | Part No. |
|----------------------------------|--|----------|
| Resistors (all 1/4W / 5%) | | |
| 4ohm7 | R334, 513, 515 | 10004 |
| 10ohm | R122, 301, 302 | 10008 |
| 27ohm | R509, 510 | 10017 |
| 47ohm | R342, 343, 346, 347, 367, 368, 521 - 524 | 10020 |
| 56ohm | R125, 140 | 809247 |
| 68ohm | R305, 306 | 10028 |
| 100ohm | R121, 133, 210, 466, 467 | 10032 |
| 120ohm | R317, 318 | 10034 |
| 220ohm | R101, 502, 503, 506, 507, 517, 518 | 10040 |
| 270ohm | R143, 206 | 10042 |
| 330ohm | R102, 109, 111 | 10044 |
| 470ohm | R116, 128 | 10048 |
| 560ohm | R141, 703, 716 | 10050 |
| 680ohm | R409, 410, 464, 465 | 10052 |
| 820ohm | R481 | 10054 |
| 1K | R202, 532 | 10061 |
| 1K2 | R132, 209, 420, 421 | 10063 |
| 1K5 | R426, 427, 432, 433, 438, 439, 444, 445, 450, 451, 456, 457, 477 | 10065 |
| 1K8 | R519, 520 | 10067 |
| 2K2 | R118, 135, 137, 304, 331, 332, 414, 415, 470, 478, 702 | 10069 |
| 3K3 | R204, 205, 309, 310, 340, 341 | 10073 |
| 3K9 | R115, 315, 316, 730, 732, 737, 739 | 10075 |
| 4K7 | R127, 130, 144, 705 | 10077 |
| 5K6 | R129, 329, 330, 407, 408, 416 - 419, 428 - 431, 440 - 443, 452 - 455, 462, 463, 704 | 10079 |
| 8K2 | R120, 207, 208, 460, 461 | 10083 |
| 10K | R108, 123, 333, 344, 348, 468, 469, 472, 474, 525, 526, 530, 531, 707 - 715, 719, 727, 728, 733, 735, 736, 742, 734, 741 | 10085 |
| 12K | R107, 325, 326, 488, 511, 512 | 10087 |
| 15K | R320, 487, 490, 495, 501 | 10089 |
| 18K | R324, 339, 499 | 10091 |
| 20K | R201 | 10092 |
| 22K | R131, 337, 338, 483, 706, 718, 720 - 726 | 10093 |
| 27K | R345, 349, 479, 482, 527, 528 | 10095 |
| 39K | R104, 500 | 10099 |
| 47K | R142, 480, 489, 498 | 10101 |
| 56K | R106, 136 | 10103 |
| 68K | R119, 321, 322, 738, 740, 729, 731 | 10105 |
| 82K | R424, 425 | 10107 |
| 100K | R117, 124, 203, 307, 308, 311, 312, 422, 423, 434 - 437, 446 - 449, 458, 459, 475, 476 | 10109 |
| 120K | R717 | 10111 |
| 150K | R105, 112 | 10113 |
| 220K | R103, 110, 138, 411, 412, 533 | 10117 |
| 330K | R514, 516 | 10121 |
| 390K | R126, 492, 494, 497, 504, 505 | 10123 |
| 470K | R113, 114, 313, 314, 405, 406 | 10125 |
| 680K | R484, 491, 493, 496 | 10129 |
| 1M | R139 | 10147 |
| 1M8 | R403, 404 | 10150 |
| 2M2 | R401, 402 | 10151 |

IC VOLTAGES FOR REMOTE MODULE

| | | | |
|---|---------|----|----------|
| 1 | 0 | 9 | 0 |
| 2 | 0 | 10 | 2.7V DC |
| 3 | 0V DC | 11 | 3.3V DC |
| 4 | 0V DC | 12 | 3.3V DC |
| 5 | 0V DC | 13 | 3.3V DC |
| 6 | 3.3V DC | 14 | 3.3V DC |
| 7 | 2.3V DC | 15 | 3.3V DC |
| 8 | 0.3V DC | 16 | 2.75V DC |

Note: All parts shown with either the symbol  or with an 'S' prefix on the part numbers; are safety critical items and must be replaced with items having an identical safety specification. All these items may be purchased direct from AMSTRAD CONSUMER ELECTRONICS PLC

| Value | Circuit Reference | Part No. |
|----------------------------------|--|----------|
| Extra components on TS-88 | | |
| Resistors | | |
| 150ohm | R356 | 10036 |
| 560ohm | R365 | 10050 |
| 1K | R359, 360 | 10061 |
| 1K5 | R471, 473 | 10065 |
| 5K6 | R320, 357, 358, 418 | 10079 |
| 6K8 | R485 | 10081 |
| 8K2 | R355, 366 | 10083 |
| 10K | R363, 364, 486 | 10085 |
| 56K | R416, 417 | 10103 |
| 68K | R353, 354 | 10105 |
| 150K | R351, 352, 361, 362 | 10113 |
| Safety Resistors | | |
| 10ohm 1/2W | R350 | S/800200 |
| 39ohm 1/2W(f) | R335 | S/800201 |
| 82ohm 2W | R701 | S/800202 |
| 100ohm 1/2W(f) | R508 | S/809224 |
| 180ohm 1/2W | R134, 336, 413 | S/800203 |
| 220ohm 1/2W | R327 | S/800204 |
| 820ohm 1/2W | R529 | S/800205 |
| Extra on TS-88 | | |
| 4ohm7 1/2W | R513, 515 | S/800206 |
| 220ohm 1/2W | R517, 518 | S/800207 |
| * (f) = fusible resistor | | |
| Capacitors | | |
| Ceramic Capacitors | | |
| 5pf | C109, 110, 114 | 400104 |
| 8pf | C401, 402 | 400105 |
| 10pf | C101, 103, 154 | 24001 |
| 15pf | C108, 111, 704, 705 | 400106 |
| 18pf | C104 | 610122 |
| 22pf | C123 | 24021 |
| 25pf | C102 | 24028 |
| 75pf | C118 | 800208 |
| 100pf | C125, 142, 311, 312, 405, 406, 447, 448 | 24016 |
| 150pf | C513, 715 | 24017 |
| 180pf | C490, 491 | 400107 |
| 220pf | C208, 209, 329, 330 | 400107 |
| 220pf | C208, 209, 329, 330 | 400107 |
| 330pf | C441, 442 | 24003 |
| 680pf | C321, 322 | 809239 |
| 820pf | C415, 416, 439, 440 | 800209 |
| 0.001uF | C105, 410, 411 | 24027 |
| 0.01uF | C106, 115, 116, 119, 134, 136, 512 | 24011 |
| 0.022uF | C107, 112, 126, 127, 130, 133, 137, 149, 150, 153, 703 | 24013 |
| 0.047uF | C501-508 | 24015 |

PARTS LIST FOR REMOTE CONTROL MODULE

| Value | Circuit Reference | Part No. |
|--------------------|-------------------|----------|
| Resistors | | |
| 1ohm | R603 | 809252 |
| 56ohm | R602 | 809247 |
| 3K3 | R601 | 10073 |
| 22K | R604 | 10093 |
| Capacitors | | |
| 100pF | C602, 603 | 21001 |
| 100uF/6.3V | C601 | 20028 |
| Transistors | | |
| 2SD 736 or 2SD 637 | Q601 | 800230 |
| 2SD 638 or 2SD 639 | Q601 | 800231 |
| IC | | |
| IC601 | UPC 1913C | 800232 |
| Diodes | | |
| MA 165 or MA 150 | D601 - 603 | 800233 |
| SE 303A or LN.66 | D604, 605 | 800234 |

IC & TRANSISTOR VOLTAGES

IC101 – AN7213

| | | | |
|---|---------|---|---------|
| 1 | 4.3V DC | 5 | 4.9V DC |
| 2 | 5.0V DC | 6 | 5.0V DC |
| 3 | 5.0V DC | 7 | 4.3V DC |
| 4 | 0V DC | | |

IC102 – HA12413

| | FM | AM | | FM | AM |
|---|---------|---------|----|---------|---------|
| 1 | 1.8V DC | 1.2V DC | 9 | 2.2V DC | 2.4V DC |
| 2 | 1.8V DC | 1.2V DC | 10 | 2.2V DC | 2.5V DC |
| 3 | 5.8V DC | 0V DC | 11 | 5.9V DC | 5.9V DC |
| 4 | 1.8V DC | 2.0V DC | 12 | 0.4V DC | 0.7V DC |
| 5 | 0V DC | 0V DC | 13 | 0V DC | 0V DC |
| 6 | 1.3V DC | 1.3V DC | 14 | 2.0V DC | 2.1V DC |
| 7 | 2.0V DC | 2.1V DC | 15 | 0.2V DC | 0.4V DC |
| 8 | 2.0V DC | 2.0V DC | 16 | 0.9V DC | 0.9V DC |

IC201 – UPC 1197C

| | | | | | |
|---|----------|----------|----|---------|-------|
| 1 | 4.8V DC | 0V DC | 9 | 0V DC | 0V DC |
| 2 | 1.5V DC | 0V DC | 10 | 1.6V DC | 0V DC |
| 3 | 2.0V DC | 0V DC | 11 | 1.6V DC | 0V DC |
| 4 | 1.5V DC | 0V DC | 12 | 1.3V DC | 0V DC |
| 5 | 1.6V DC | 0V DC | 13 | 1.6V DC | 0V DC |
| 6 | 11.9V DC | 11.9V DC | 14 | 1.6V DC | 0V DC |
| 7 | 0V DC | 0V DC | 15 | 1.6V DC | 0V DC |
| 8 | 0.3V DC | 0V DC | 16 | 1.6V DC | 0V DC |

IC301 – LA 3160

| | | | |
|---|---------|---|---------|
| 1 | 1.3V DC | 5 | 0V DC |
| 2 | 0.8V DC | 6 | 3.0V DC |
| 3 | 2.3V DC | 7 | 0.8V DC |
| 4 | 5.4V DC | 8 | 1.3V DC |

IC302, 302 – LB1403

| | | | |
|---|----------|---|----------|
| 1 | 11.3V DC | 6 | 11.2V DC |
| 2 | 11.3V DC | 7 | 0V DC |
| 3 | 1.3V DC | 8 | 0V DC |
| 4 | 11.3V DC | 9 | 12.8V DC |
| 5 | 0V DC | | |

IC401 - 404 – UPC 324C

| | | | |
|---|----------|----|---------|
| 1 | 0V DC | 8 | 6.7V DC |
| 2 | 6.7V DC | 9 | 6.7V DC |
| 3 | 6.7V DC | 10 | 6.6V DC |
| 4 | 13.3V DC | 11 | 0V DC |
| 5 | 6.7V DC | 12 | 6.6V DC |
| 6 | 6.7V DC | 13 | 6.7V DC |
| 7 | 6.7V DC | 14 | 6.7V DC |

IC405 – TA 7630P

| | | | |
|---|---------|----|----------|
| 1 | 0V DC | 9 | 2.2V DC |
| 2 | 6.1V DC | 10 | 2.2V DC |
| 3 | 6.2V DC | 11 | 6.2V DC |
| 4 | 6.2V DC | 12 | 12.4V DC |
| 5 | 4.5V DC | 13 | 6.3V DC |
| 6 | 6.2V DC | 14 | 6.3V DC |
| 7 | 2.1V DC | 15 | 6.1V DC |
| 8 | 1.4V DC | 16 | 6.2V DC |

IC406 – STK 4332

| | | | |
|---|----------|----|----------|
| 1 | 7.1V DC | 9 | 8.5V DC |
| 2 | 6.8V DC | 10 | 3.6V DC |
| 3 | 0V DC | 11 | 14.9V DC |
| 4 | 0V DC | 12 | 0V DC |
| 5 | 14.9V DC | 13 | 0V DC |
| 6 | 3.7V DC | 14 | 6.9V DC |
| 7 | 9.5V DC | 15 | 7.3V DC |
| 8 | 0V DC | | |

IC407, 408 – LB 1403

| | | | |
|---|----------|---|----------|
| 1 | 11.5V DC | 6 | 11.4V DC |
| 2 | 11.4V DC | 7 | 0V DC |
| 3 | 0V DC | 8 | 0V DC |
| 4 | 11.4V DC | 9 | 12.9V DC |
| 5 | 0V DC | | |

IC701 – UPD 1510C

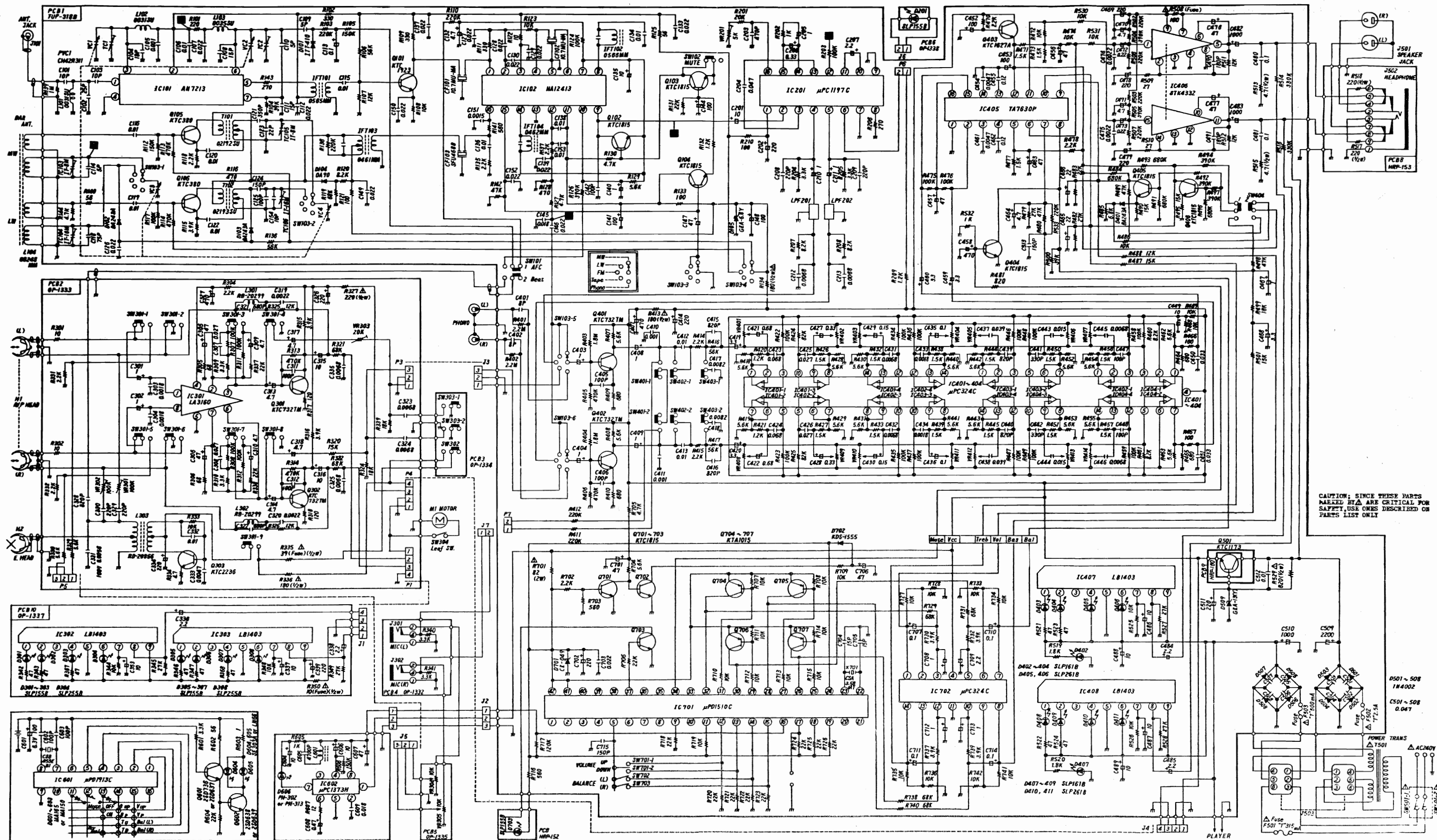
| | | | |
|----|---------|----|---------|
| 1 | 0V DC | 22 | 2.0V DC |
| 2 | 0V DC | 23 | 1.4V DC |
| 3 | 0V DC | 24 | 5.0V DC |
| 4 | 0V DC | 25 | 2.6V DC |
| 5 | 3.9V DC | 26 | 2.5V DC |
| 6 | 3.6V DC | 27 | 2.6V DC |
| 7 | 3.9V DC | 28 | 2.5V DC |
| 8 | 3.9V DC | 29 | 2.6V DC |
| 9 | 0V DC | 30 | 2.5V DC |
| 10 | 0.7V DC | 31 | 3.9V DC |
| 11 | 5.0V DC | 32 | 0V DC |
| 12 | 0V DC | 33 | 3.9V DC |
| 13 | 0V DC | 34 | 0V DC |
| 14 | 0V DC | 35 | 0V DC |
| 15 | 0V DC | 36 | 0V DC |
| 16 | 5.0V DC | 37 | 0V DC |
| 17 | 5.0V DC | 38 | 0V DC |
| 18 | 5.0V DC | 39 | 0V DC |
| 19 | 5.0V DC | 40 | 0V DC |
| 20 | 0V DC | 41 | 5.0V DC |
| 21 | 0V DC | 42 | 5.0V DC |

TRANSISTOR VOLTAGES

| Q. No. | E | B | C |
|--------|----------|----------|----------|
| Q101 | 0.4V DC | 1.0V DC | 5.9V DC |
| Q102 | 2.0V DC | 2.7V DC | 2.0V DC |
| Q103 | 0V DC | 0V DC | 2.7V DC |
| Q104 | 0V DC | 0.2V DC | 6.0V DC |
| Q105 | 0.6V DC | 1.2V DC | 6.9V DC |
| Q106 | 0.5V DC | 1.0V DC | 6.8V DC |
| Q301 | 0.3V DC | 0.9V DC | 3.1V DC |
| Q302 | 0.3V DC | 0.9V DC | 3.3V DC |
| Q303 | 0.2V DC | 0.7V DC | 5.2V DC |
| Q401 | 0.9V DC | 1.5V DC | 5.6V DC |
| Q402 | 0.9V DC | 1.5V DC | 5.2V DC |
| Q403 | 12.3V DC | 13.1V DC | 13.3V DC |
| Q404 | 0V DC | 0V DC | 2.2V DC |
| Q405 | 2.1V DC | 2.7V DC | 2.2V DC |
| Q406 | 2.1V DC | 2.7V DC | 2.2V DC |
| Q501 | 13.4V DC | 14.0V DC | 9.5V DC |
| Q701 | 0V DC | 0.7V DC | 0V DC |
| Q702 | 0V DC | 0V DC | 5.1V DC |
| Q703 | 0V DC | 0V DC | 3.6V DC |
| Q704 | 5.1V DC | 4.9V DC | 1.2V DC |
| Q705 | 5.1V DC | 4.7V DC | 2.5V DC |
| Q706 | 5.1V DC | 4.7V DC | 2.5V DC |
| Q707 | 5.1V DC | 4.7V DC | 2.5V DC |

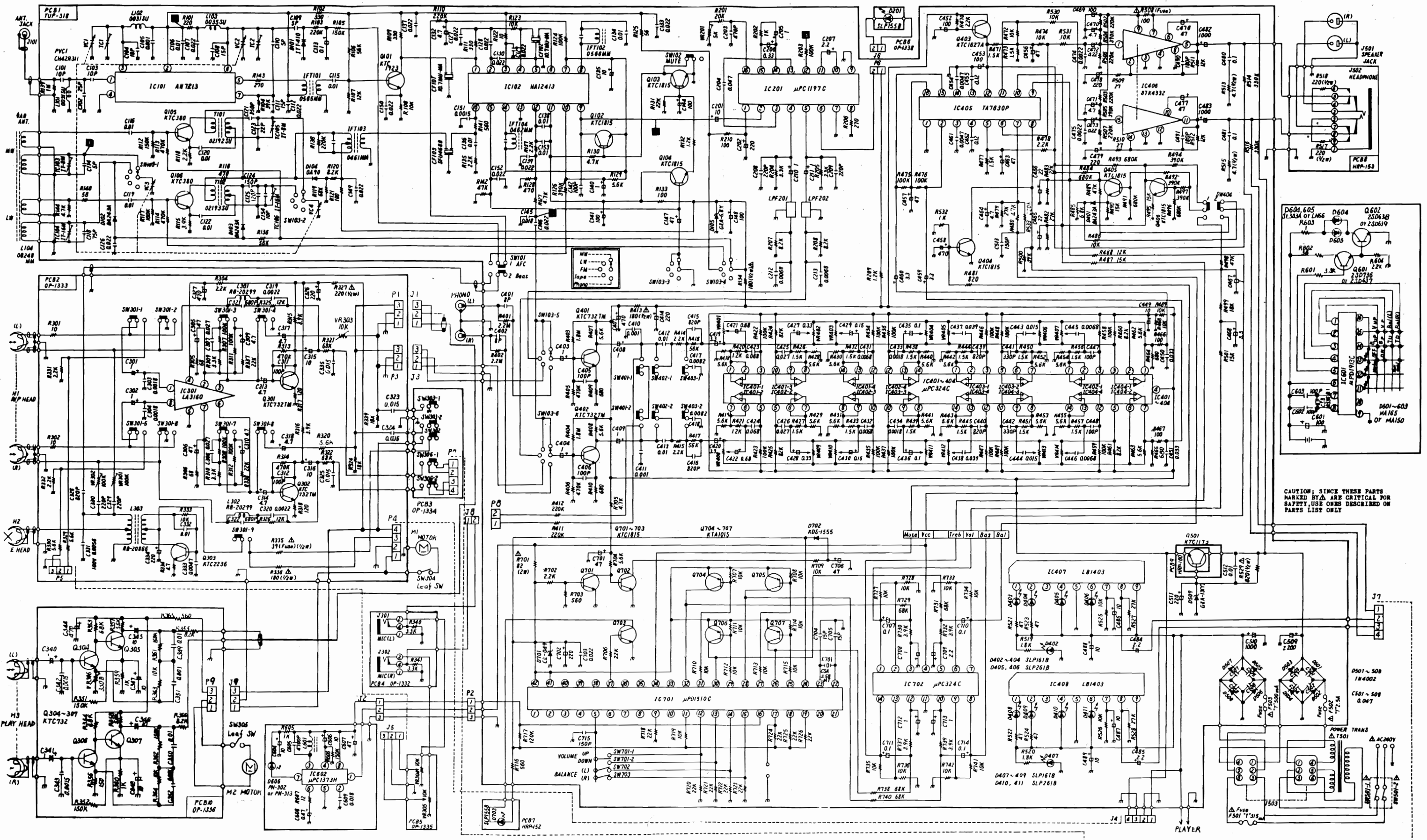
All voltages measured on AVO 8 MkV.

TS80 CIRCUIT DIAGRAM



Note: All parts shown with either the symbol Δ or with an 'S' prefix on the part numbers; are safety critical items and must be replaced with items having an identical safety specification.

TS88 CIRCUIT DIAGRAM



Note: All parts shown with either the symbol  or with an 'S' prefix on the part numbers; are safety critical items and must be replaced with items having an identical safety specification. All these items may be purchased direct from AMSTRAD CONSUMER ELECTRONICS PLC

AMSTRAD CONSUMER ELECTRONICS PLC
MANUFACTURERS OF HI-FI AND AUDIO EQUIPMENT
1-7 GARMAN ROAD, TOTTENHAM LONDON N17 0UF TELEPHONE 01-808 4505
GRAMS AMSELEC LONDON TELEX 264869 AMSELE G

In keeping with our policy of continually improving our service, and the technical quality of our products, we reserve the right to change component types, manufacturers, sources of supply or technical specification at any time.